

LTS 文件格式说明

船舶®是专门处理船海结构力学问题的有限元软件。她运行于 Windows 操作系统，使用后缀名为 LTS 的文件格式对有限元模型进行描述，以方便后续的计算和数据处理。

船舶®只处理船海结构中最常见的板单元和梁单元。在展开具体的格式介绍之前需要对板和梁的位置关系进行介绍。

板和梁的位置关系

板梁组合结构在船海工程中最常见，这种结构类型中板和梁相对位置关系有其自身特点。

梁截面类型

船舶®中的梁截面分为三种：T 型梁截面（类型编号 0，如图 1 所示）、L 型梁截面（类型编号 1，如图 2 所示）、C 型梁截面（类型编号 2，如图 3 所示）。定义伪代码如图 4 所示。

L 型梁截面不是左右对称的。如图 2(a)所示，L 型梁面板指向梁的局部坐标系 s 轴正向；如图 2(b)所示，L 型梁面板指向 s 轴负向。两种情况下，L 型梁截面关于 t 轴互为镜像关系。船舶®通过梁截面镜像标记 BeamSecMirrored 对这两种情况加以区分：BeamSecMirrored=0，代表 L 型梁面板指向 s 轴正向；BeamSecMirrored=1，代表 L 型梁面板指向 s 轴负向。

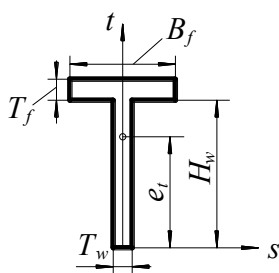
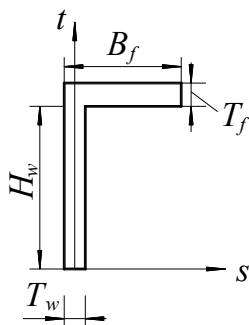
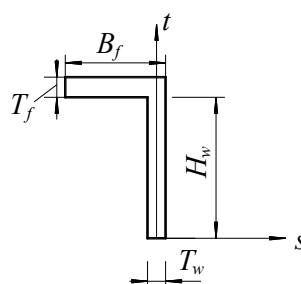


图 1 T 型梁截面（类型编号 0）



(a)面板指向 s 轴正向



(b)面板指向 s 轴负向

图 2 L 型梁截面（类型编号 1）

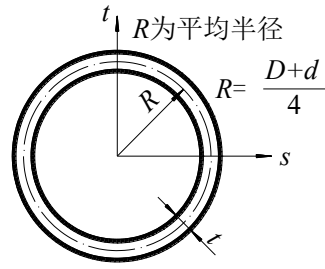


图 3 C 型(圆环型)梁截面（类型编号 2）

```
//T 型梁截面(类型编号=0)
struct T_BeamSec
{
    double Hw;//腹板高度
    double Tw;//腹板厚度
    double Bf;//面板宽度
    double Tf;//面板厚度
};

//L 型梁截面(类型编号=1)
struct L_BeamSec
{
    double Hw;//腹板高度
    double Tw;//腹板厚度
    double Bf;//面板宽度
    double Tf;//面板厚度
};

//C 型(圆环型)梁截面(类型编号=2)
struct C_BeamSec
{
    double R;//横截面平均半径=(D+d)/4    (D,d 为横截面内外直径)
    double T;//厚度
};

//梁截面
struct BeamSec
{
    int Type;//梁截面类型编号-0:T 型梁截面; 1:L 型梁截面; 2:C 型 (圆环型)梁截面
    int Index;//某类型梁截面数组的下标
    double Oz;//根点相对于节点的偏移(梁沿局部坐标系 t 轴整体平移的距离)
    bool Mirrored;//梁横截面是否关于梁局部坐标系的 t 轴镜像
};

注：梁局部坐标系和偏移 Oz 如图 7 所示。
```

图 4 梁截面的定义

梁根点

如图 1、图 5 所示，梁的横截面形状类似“蘑菇”。不妨称“蘑菇”根部为“根点”。梁的两端各有一个“根点”。

以图 6 中的 T 型截面梁为例，如果将其比喻成“蘑菇”，则其面板相当于“伞面”，腹板相当于“伞柄”。T 型梁焊接在板上，相当于蘑菇种植在土壤上（将板比喻成土壤）。“蘑菇”的根部就是“根点”。腹板有四个角点，其中两个为腹板与钢板的交点，即为“根点”；其它两个为腹板与面板的交点，不妨称其为“顶点”。

以图 5 中的 T 型梁为例， p_{w0} 和 p_{w1} 为“根点”， p_{w2} 和 p_{w3} 为“顶点”。

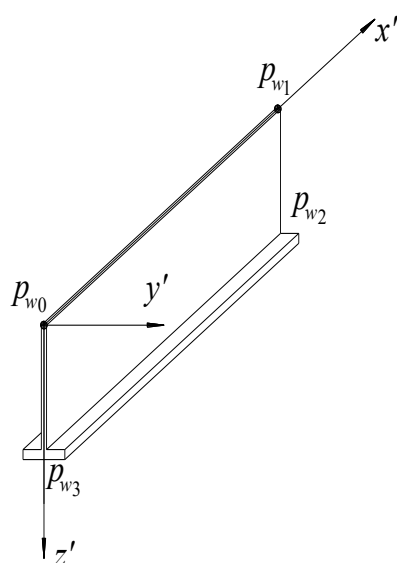


图 5 T 型梁

梁起始节点和终止节点

(1) 在船体板上选取合适的节点作为梁单元的起始节点和终止节点。以图 6 中的 T 型梁为例，可将板上的 i 、 j 节点分别作为梁单元的起始节点和终止节点。

(2) 从起始节点 i 开始到终止节点 j 结束的矢量用来标识梁单元局部坐标系的 r 轴。

(3) 在工程上，根点 (p_{w0}/p_{w1}) 和起始节点 i /终止节点 j 一般情况下是重合的（特殊情况除外）。

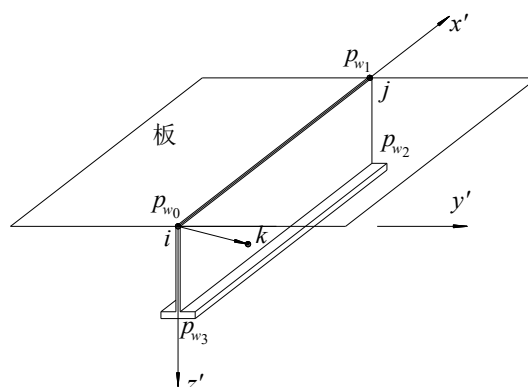


图 6 板和梁的相对位置

梁定位点和定位矢量

如图 6 所示，定位点 k 位于腹板平面内（ p_{w0} 、 p_{w1} 、 p_{w2} 和 p_{w3} 围成的四边形），且不在梁起始点的连线 ij 上。

定位矢量 BPV(Beam Position Vector)是从起始点 i 指向定位点 k 的矢量。

梁局部坐标系

通常将梁局部坐标系的轴标记为 r 、 s 、 t 或 x' 、 y' 、 z' 。

从起始节点 i 开始，到终止节点 j 结束的矢量为梁局部坐标系的 r 轴（图 6 中的 x' 轴，也即图 1 中的 r 轴）。注意：图 1 中的 r 轴垂直于纸面向外

定位矢量 BPV（图 6 中的 ik 矢量）叉乘 r 轴得到梁局部坐标系的 s 轴（图 6 中的 y' 轴，也即图 1 中的 s 轴）。

r 叉乘 s 得到梁局部坐标系的 t 轴（图 6 中的 z' 轴，也即图 1 中的 t 轴）

注：根据以上定义，可以证明定位矢量 BPV 和 t 轴的夹角一定是锐角。简单直观起见，建议用户直接把梁的定位矢量 BPV 设置成：梁的横截面上，腹板的指向。以图 6 为例，建议用户将 BPV 设置成 p_{w0} 指向 p_{w3} 的矢量或者说“根点”指向“伞面”的矢量。此时 BPV 即为梁局部坐标系的 t 轴。

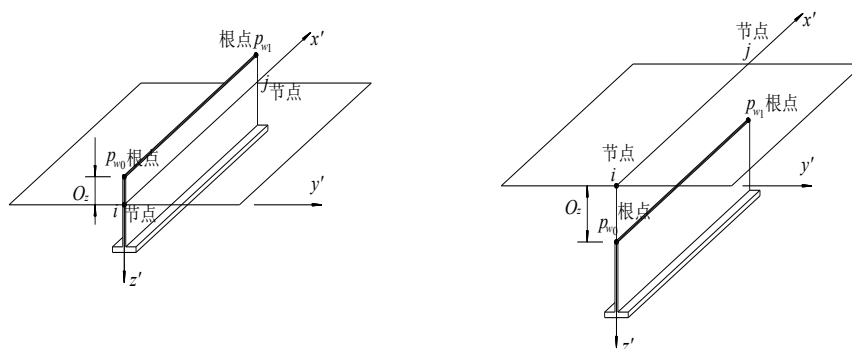
梁的偏移 Oz

如图 6 所示，对于船海工程而言，大部分情况下，根点（ p_{w0}/p_{w1} ）和起始节点 i /终止节点 j 一般情况下是重合的，但是特殊情况下，根点有可能相对于节点产生偏移 Oz 。下面给出 Oz 的定义。

Oz :根点相对于梁起始节点 SNd(Start Node)或终止节点 ENd(End Node)的偏移，这个偏移是沿着梁局部坐标系 t 轴进行的。 Oz 也可看作是梁沿局部坐标系 t 轴（ z' 轴）平移的距离。

当 $Oz=0$ ，“根点”和梁起始节点或终止节点重合。

如图 7 所示，为 T 型梁的偏移 Oz 。L 型梁的 Oz 定义与此类似。



(a) $Oz < 0$

(b) $Oz > 0$

图 7 T 型梁的偏移 Oz

如图 8 所示，C 型梁的根点设置在端面圆心处（注意这点与 T、L 型梁显著不同）。如图 9 所示，C 型梁的 $BPV = \langle 0, 0, -1 \rangle$ ，与总体坐标系 z 轴（总体坐标系的 x 、 y 轴位于板的中面内， z 轴垂直于板面）相反，同时将其起始节点 i 设置在板上。如图 9a 所示，节点 i 和根点重合， $Oz = 0$ ；如图 9b 所示，梁的局部坐标系沿 t 轴平移， $Oz > 0$ 。

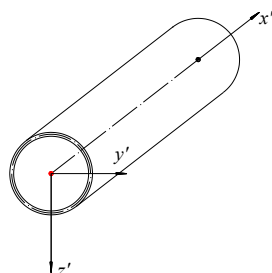
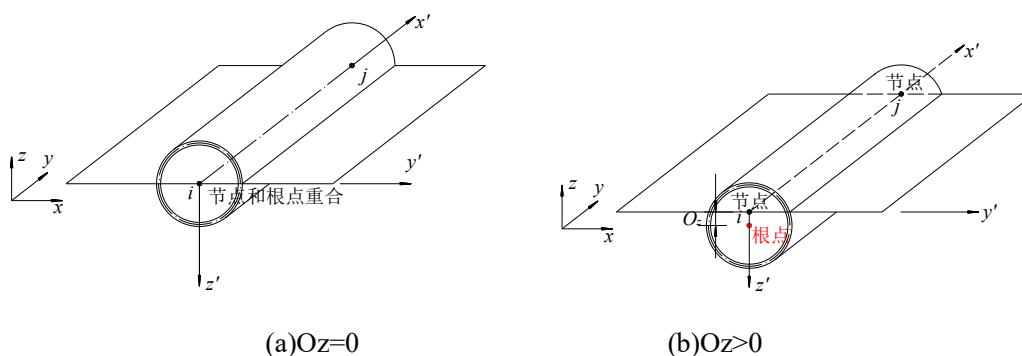


图 8 C 型梁的根点设置在端面圆心处



(a) $Oz = 0$

(b) $Oz > 0$

图 9C 型梁和板 $BPV = \langle 0, 0, -1 \rangle$

如图 10 所示，C 型梁的 $BPV = \langle 0, -1, 0 \rangle$ ，与总体坐标系 y 轴相反，同时将其起始节点 i 设置在板上，节点 i 和根点重合， $Oz = 0$ 。

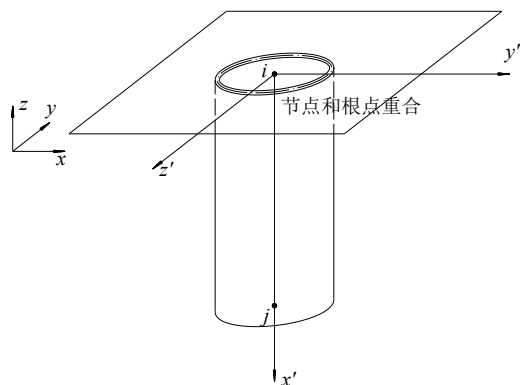


图 10C 型梁和板 $BPV=\langle 0,-1,0 \rangle$, $Oz=0$

梁截面镜像标记

T、L、C 型梁截面中，L 型梁的面板是非对称的。如图 2(a)所示，L 型梁面板指向梁的局部坐标系 s 轴正向；如图 2(b)所示，L 型梁面板指向 s 轴负向。两种情况下，L 型梁截面关于 t 轴互为镜像关系。船舶®通过梁截面镜像标记 **BeamSecMirrored** 对这两种情况加以区分：**BeamSecMirrored=0**，代表 L 型梁面板指向 s 轴正向；**BeamSecMirrored=1**，代表 L 型梁面板指向 s 轴负向。

文件格式

下面图 11 中的钓台为例(模型文件“钓台.lts”参考图 13)，对 LTS 文件格式展开说明。

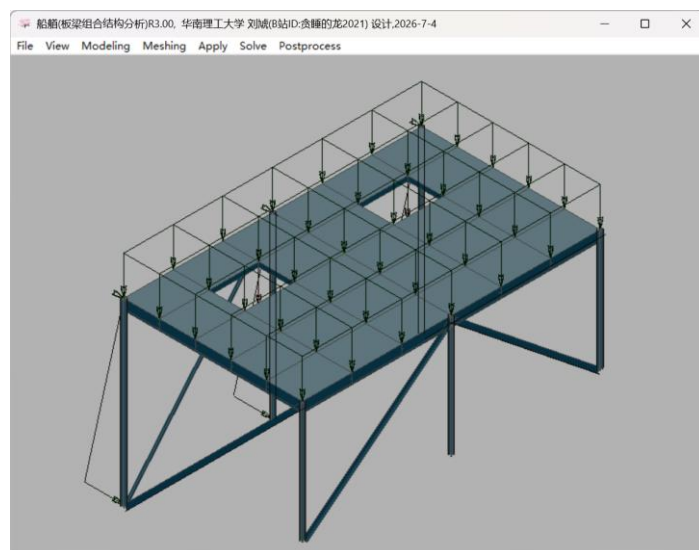


图 11 船舶®模型-钓台

版本号

Lotus R3.00

解释：版本号=3.00

注：该版本于 2025 年 4 月 14 日开发

材料

Number of materials:NMT=1

解释：材料数目 NMT 为 1

#0:

E=210000

解释：编号为 0 的材料的弹性模量为 210000（推荐量纲:Mpa，即 N/mm^2 ）

Mu=0.3

解释：编号为 0 的材料的泊松比为 0.3（无量纲）

Density=7.85e-09

解释：编号为 0 的材料的密度=7.85e-9（推荐量纲:t/mm³）

板厚

Number of thicknesses:NTK=1

解释：板壳的厚度数目 NTK 为 1

#0:

TK=10

解释：编号为 0 的厚度 TK 为 10

梁截面

T 型梁截面

Number of T_beam sections:NTBS=1

解释：T 型梁截面数量 NTBS 为 1

#0:

解释：某个 T 型梁截面的下标为 0，以下 4 行（第 1、3、5、7 行）是第 0 个 T 型梁截面的相关数据

Hw=150

解释：腹板高度 Height of web(简写为 Hw)为 150

Tw=8

解释：腹板厚度 Thickness of web(简写为 Tw)为 8

Bf=50

解释：面板宽度 Breadth of face(简写为 Bf)为 50

Tf=10

解释：面板厚度 Thickness of face(简写为 Tf)为 15

L 型梁截面

Number of L_beam sections:NLBS=1

解释：L 型梁截面数目 NLBS 为 1

#0:

解释：某个 L 型梁截面的下标为 0，以下 4 行（第 1、3、5、7 行）是第 0 个 L 型梁截面的相关数据

Hw=80

解释：腹板高度 Height of web(简写为 Hw)为 80

Tw=6

解释：腹板厚度 Thickness of web(简写为 Tw)为 6

Bf=30

解释：面板宽度 Breadth of face(简写为 Bf)为 30

Tf=6

解释：面板厚度 Thickness of face(简写为 Tf)为 6

C 型梁截面

Number of C_beam sections:NCBS=1

解释：C 型梁截面数目 NCBS 为 1

#0:

解释：某个 C 型梁截面的下标为 0，以下两行（第 1、3 行）是第 0 个 C 型梁截面的相关数据

R=40

解释：C 型梁截面的平均半径为 40

T=8

解释：C 型梁截面的厚度为 8

几何点

Number of geometric points:NGPT=48

解释：几何点的数目 NGPT 为 48

0:0.00000,0.00000,0.00000

解释：冒号前面为几何点编号 0，冒号后面为几何点 0 的坐标

1:5000.00000,0.00000,0.00000

解释：冒号前面为几何点编号 1，冒号后面为几何点 1 的坐标

.....

壳

Number of shells: NSHL=28

解释：壳的数目 NSHL 为 28

0[4]:0,4,37,14[0,0]

解释：壳编号[构成壳轮廓的几何点数目]:第 0 个几何点编号,第 1 个几何点编号,...[材料编号,板厚编号]

1[4]:4,5,38,37[0,0]

2[4]:5,6,39,38[0,0]

.....

梁线

Number of beam lines: NBL=83

0:3,17<0.00000,0.00000,-

1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]

解释：

冒号前面是梁线编号 0，冒号后面分别是梁线起始点编号 3、17，梁定位矢量
梁线编号 0:起始几何点编号 3,终止几何点编号 17<梁定位矢量三个分量分别为
0,0,-1>[材料编号 0,梁截面类型编号=0,梁截面编号=0，梁截面偏移量=0.0,梁截面
镜像标记=0]

1:17,16<0.00000,0.00000,-

1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]

.....

梁线定位矢量

定位矢量 Beam Position Vector: 从起始点指向定位点的矢量（如图 6 所示）。简单起见，可以将定位矢量 BPV 设置成：梁的横截面上，腹板的指向。或者将 BPV 看做是“根点”指向“伞面”的矢量。

注：定位点位于腹板平面，且不在梁起始点的连线上。

梁截面类型、编号

1)梁截面类型编号 BeamSecType: 0 代表 T 型截面（图 1）；1 代表 L 型截面（图 2），2 代表 C 型截面（图 3）。

2)梁截面编号 BeamSecIndex。

3)梁截面偏移量 BeamSecOz: 梁根点沿局部坐标系 z' 轴（ t 轴）的偏移距离 root point Offset distance along Z axis in local coordinate system（图 7）。

4) 梁截面镜像标记 BeamSecMirrored:如图 2(a)所示，L 型梁面板指向梁的局部坐标系 s 轴正向；如图 2(b)所示，L 型梁面板指向 s 轴负向。两种情况下，L 型梁截面关于 t 轴互为镜像关系。船舶®通过梁截面镜像标记 BeamSecMirrored 对这两种情况加以区分：BeamSecMirrored=0，代表 L 型梁面板指向 s 轴正向；BeamSecMirrored=1，代表 L 型梁面板指向 s 轴负向。

壳分布载荷

Number of distributed loads on shells:NDL_SHL=28

解释：壳分布载荷的数量 NDL_SHL=28

0:-0.01000,-0.01000,-0.01000

解释：冒号前是壳编号 0，冒号后是 0 号壳(多边形)前三个顶点的分布载荷大小，分别为：-0.01,-0.01 和-0.01

注：壳(多边形)分布载荷的推荐量纲： N/mm^2 。其正方向沿局部坐标系 z' 轴(t 轴)。

1:-0.01000,-0.01000,-0.01000

.....

梁线分布载荷

Number of distributed loads on beamlines:NDL_BL=3

解释：梁分布载荷数量 NDL_BL=3

72:0.00000,0.30000

解释：冒号前是梁线编号 72，冒号后是梁线起讫点的载荷强度。推荐工程量纲： N/mm 。其正方向沿局部坐标系 z' 轴 (t 轴)。

75:0.00000,0.30000

.....

节点

Number of nodal points:NPOIN=1455

解释：节点数目 NPOIN=1455

0:0.00000,0.00000,-2000.00000

解释：冒号前面是节点编号，冒号后面是节点坐标

1:0.00000,0.00000,0.00000

2:0.00000,100.00000,0.00000

.....

壳网格

Mesh of shell(ID=0):

解释：0 号壳的网格

Number of nodal points=63

解释：壳内节点数目=63

0->1

解释：箭头前为节点的“局部”编号 0，箭头后为节点的“总体”编号 1

1->38

解释：箭头前为节点的“局部”编号 1，箭头后为节点的“总体”编号 38

.....

注:

(1)节点"局部"编号是指结构局部某个几何体(壳多边形或者梁线)内节点的编号;

(2)节点"总体"编号是指全部几何体内的节点放在一起后的编号。

Number of four-nodes elements=48

解释: 壳内四节点单元的数目=48

0,1,10,9

解释: 壳内某个四节点单元四个节点的“局部”编号

1,2,11,10

2,3,12,11

.....

Number of three-nodes elements=0

解释: 壳内三节点单元的数目=0

梁线网格

Mesh of beamline(ID=0):

解释: 0 号梁线的网格

Number of nodal points=7

解释: 梁线内部节点数目=7

0->32

解释: 箭头前为节点的“局部”编号 0, 箭头后为节点的“总体”编号 32

1->30

2->29

3->28

4->27

5->26

6->25

Number of beam elements=6

解释: 梁单元的数目=6

0,1

解释: 梁单元起、讫节点的“局部”编号

1,2

2,3

3,4

4,5

5,6

边界条件

Number of restricted nodal points:NRN=6

解释: 约束节点个数 NRN=6

0:1 1 1 1 1 1

31:1 1 1 1 1 1
721:1 1 1 1 1 1

.....

解释:

冒号:前面为约束节点编号,冒号后面为节点 6 个自由度($U_x, U_y, U_z, R_x, R_y, R_z$)的约束标记。1 代表对应自由度被约束, 0 代表对应自由度没有被约束。约束标记之间由空格符间隔。

其中: U_x, U_y 和 U_z 分别代表节点沿 x 轴、 y 轴和 z 轴的平动自由度; R_x, R_y 和 R_z 分别代表节点绕 x 轴、 y 轴和 z 轴的转动自由度

比如: “2:0 1 1 1 0 0” 表示节点 2 沿 x 轴的平动自由度、绕 y 轴和 z 轴的转动自由度没有被约束, 其它自由度则受到约束。

集中力

Number of forces:NFOR=8

解释: 集中力个数 NFOR=8

273<0.00000,0.00000,-2000.00000,0.00000,0.00000,0.00000>

解释: 尖括号外面是承受集中力和弯矩的节点的编号, 尖括号里面是集中力三个分量和集中弯矩的三个分量: $F_x, F_y, F_z, M_x, M_y, M_z$ 。

其中:

F_x, F_y, F_z 分别为集中力沿 x, y, z 轴的分量;

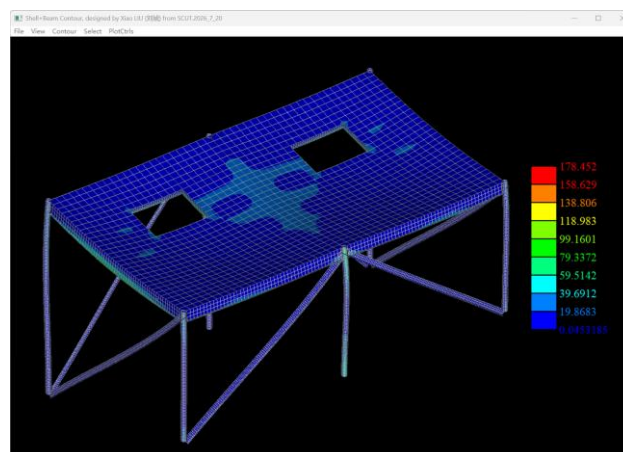
M_x, M_y, M_z 分别为集中弯矩绕 x, y, z 轴的分量。

279<0.00000,0.00000,-2000.00000,0.00000,0.00000,0.00000>

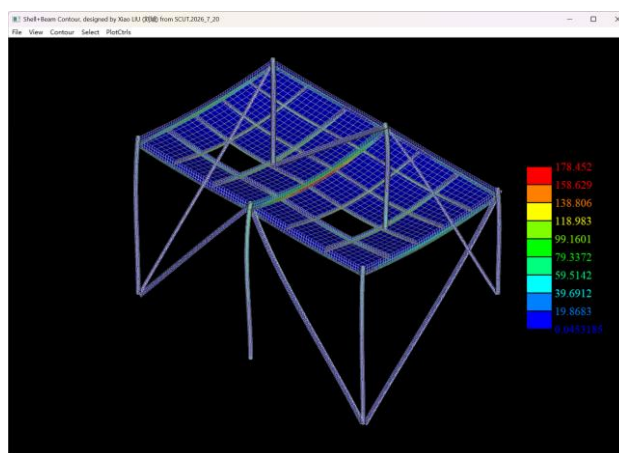
.....

结束标记

###end###



(a)WS+视角



(b)WS-视角

图 12 钓台的 Se 应力云图

注意:

fem_solving.txt 文件**不存储**几何相关信息: (1)几何点信息(编号、坐标); (2)壳相关信息(几何点构成、材料、板厚和多边形分布载荷); (3)梁线相关信息(几何点构成、材料、梁截面、梁定位矢量、偏移量和梁线分布载荷)。

附录

船艏模型-钓台

注意: 纸质版教材中不要放这个“钓台.lts”文件, 因为这个文件太长了。但考虑到该文件喂给 AI 后能方便其理顺船艏®的内在逻辑, 帮助用户更好的进行二次开发^注, 所以这个文件在电子版教材中暂时予以保留。

注: 船艏®可以开展的二次开发功能有: (1) AI 编程针对某个特定工程结构物进行参数化建模; (2) AI 编程将 LTS 格式的文件转换成 BDF 格式文件, 以方便将船艏与 NASTRAN 进行对照分析, 有利于树立国人对于国产工业软件的信心。

```

### Lotus R3.00 ###
Number of materials:NMT=1
#0:
E=210000
Mu=0.3
Density=7.85e-09
Number of thicknesses:NTK=1
#0:
TK=10
Number of T_beam sections:NTBS=1
#0:
Hw=150
Tw=8
Bf=50

```

Tf=10
Number of L_beam sections:NLBS=1
#0:
Hw=80
Tw=6
Bf=30
Tf=6
Number of C_beam sections:NCBS=1
#0:
R=40
T=8
Number of geometric points:NGPT=48
0:0.00000,0.00000,0.00000
1:5000.00000,0.00000,0.00000
2:5000.00000,3000.00000,0.00000
3:0.00000,3000.00000,0.00000
4:833.33333,0.00000,0.00000
5:1666.66667,0.00000,0.00000
6:2500.00000,0.00000,0.00000
7:3333.33333,0.00000,0.00000
8:4166.66667,0.00000,0.00000
9:4166.66667,3000.00000,0.00000
10:3333.33333,3000.00000,0.00000
11:2500.00000,3000.00000,0.00000
12:1666.66667,3000.00000,0.00000
13:833.33333,3000.00000,0.00000
14:0.00000,600.00000,0.00000
15:0.00000,1200.00000,0.00000
16:0.00000,1800.00000,0.00000
17:0.00000,2400.00000,0.00000
18:5000.00000,600.00000,0.00000
19:5000.00000,1200.00000,0.00000
20:5000.00000,1800.00000,0.00000
21:5000.00000,2400.00000,0.00000
22:833.33333,2400.00000,0.00000
23:1666.66667,2400.00000,0.00000
24:2500.00000,2400.00000,0.00000
25:3333.33333,2400.00000,0.00000
26:4166.66667,2400.00000,0.00000
27:833.33333,1800.00000,0.00000
28:1666.66667,1800.00000,0.00000
29:2500.00000,1800.00000,0.00000
30:3333.33333,1800.00000,0.00000
31:4166.66667,1800.00000,0.00000

32:833.33333,1200.00000,0.00000
33:1666.66667,1200.00000,0.00000
34:2500.00000,1200.00000,0.00000
35:3333.33333,1200.00000,0.00000
36:4166.66667,1200.00000,0.00000
37:833.33333,600.00000,0.00000
38:1666.66667,600.00000,0.00000
39:2500.00000,600.00000,0.00000
40:3333.33333,600.00000,0.00000
41:4166.66667,600.00000,0.00000
42:5000.00000,3000.00000,-3000.00000
43:0.00000,3000.00000,-3000.00000
44:0.00000,0.00000,-2000.00000
45:5000.00000,0.00000,-2000.00000
46:2500.00000,0.00000,-2000.00000
47:2500.00000,3000.00000,-3000.00000

Number of shells:NSHL=28

0[4]:0,4,37,14[0,0]
1[4]:4,5,38,37[0,0]
2[4]:5,6,39,38[0,0]
3[4]:6,7,40,39[0,0]
4[4]:7,8,41,40[0,0]
5[4]:8,1,18,41[0,0]
6[4]:14,37,32,15[0,0]
7[4]:37,38,33,32[0,0]
8[4]:38,39,34,33[0,0]
9[4]:39,40,35,34[0,0]
10[4]:40,41,36,35[0,0]
11[4]:41,18,19,36[0,0]
12[4]:15,32,27,16[0,0]
13[4]:32,33,28,27[0,0]
14[4]:33,34,29,28[0,0]
15[4]:34,35,30,29[0,0]
16[4]:35,36,31,30[0,0]
17[4]:36,19,20,31[0,0]
18[4]:16,27,22,17[0,0]
20[4]:28,29,24,23[0,0]
21[4]:29,30,25,24[0,0]
23[4]:31,20,21,26[0,0]
24[4]:17,22,13,3[0,0]
25[4]:22,23,12,13[0,0]
26[4]:23,24,11,12[0,0]
27[4]:24,25,10,11[0,0]
28[4]:25,26,9,10[0,0]

29[4]:26,21,2,9[0,0]
Number of beam lines:NBL=83
0:3,17<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
1:17,16<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
2:16,15<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
3:15,14<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
4:14,0<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
5:0,4<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
6:4,5<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
7:5,6<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
8:6,7<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
9:7,8<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
10:8,1<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
11:1,18<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
12:18,19<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
13:19,20<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
14:20,21<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
15:21,2<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
16:2,9<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
17:9,10<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
18:10,11<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
19:11,12<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
20:12,13<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]

21:13,3<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
22:14,37<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
23:37,38<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
24:38,39<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
25:39,40<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
26:40,41<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
27:41,18<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
28:15,32<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
29:32,33<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
30:33,34<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
31:34,35<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
32:35,36<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
33:36,19<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
34:16,27<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
35:27,28<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
36:28,29<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
37:29,30<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
38:30,31<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
39:31,20<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
40:17,22<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
41:22,23<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
42:23,24<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]

43:24,25<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
44:25,26<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
45:26,21<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
47:23,28<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
48:12,23<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
49:28,33<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
50:33,38<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
51:38,5<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
52:9,26<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
53:26,31<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
54:31,36<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
55:36,41<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
56:41,8<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=1]
57:13,22<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
58:22,27<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
59:27,32<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
60:32,37<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
61:37,4<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
62:10,25<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
63:25,30<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
64:30,35<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
65:35,40<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]

66:40,7<0.00000,0.00000,-
1.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
67:11,24<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
68:24,29<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
69:29,34<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
70:34,39<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
71:39,6<0.00000,0.00000,-
1.00000>[0,BeamSecType=0,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
72:3,43<0.00000,-
1.00000,0.00000>[0,BeamSecType=2,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
73:0,44<0.00000,-
1.00000,0.00000>[0,BeamSecType=2,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
74:1,45<0.00000,-
1.00000,0.00000>[0,BeamSecType=2,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
75:2,42<0.00000,-
1.00000,0.00000>[0,BeamSecType=2,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
76:11,47<0.00000,-
1.00000,0.00000>[0,BeamSecType=2,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
77:6,46<0.00000,-
1.00000,0.00000>[0,BeamSecType=2,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
81:42,11<1.00000,0.00000,0.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=-
80.00000,BeamSecMirrored=0]
82:11,43<-1.00000,0.00000,0.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=-
80.00000,BeamSecMirrored=0]
83:6,45<-
1.00000,0.00000,0.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
84:44,6<1.00000,0.00000,0.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
85:43,0<0.00000,-
1.00000,0.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]
86:42,1<0.00000,-
1.00000,0.00000>[0,BeamSecType=1,BeamSecIndex=0,BeamSecOz=0.00000,BeamSecMirrored=0]

ed=1]

Number of distributed loads on shells:NDL_SHL=28

0:-0.01000,-0.01000,-0.01000
1:-0.01000,-0.01000,-0.01000
2:-0.01000,-0.01000,-0.01000
3:-0.01000,-0.01000,-0.01000
4:-0.01000,-0.01000,-0.01000
5:-0.01000,-0.01000,-0.01000
6:-0.01000,-0.01000,-0.01000
7:-0.01000,-0.01000,-0.01000
8:-0.01000,-0.01000,-0.01000
9:-0.01000,-0.01000,-0.01000
10:-0.01000,-0.01000,-0.01000
11:-0.01000,-0.01000,-0.01000
12:-0.01000,-0.01000,-0.01000
13:-0.01000,-0.01000,-0.01000
14:-0.01000,-0.01000,-0.01000
15:-0.01000,-0.01000,-0.01000
16:-0.01000,-0.01000,-0.01000
17:-0.01000,-0.01000,-0.01000
18:-0.01000,-0.01000,-0.01000
20:-0.01000,-0.01000,-0.01000
21:-0.01000,-0.01000,-0.01000
23:-0.01000,-0.01000,-0.01000
24:-0.01000,-0.01000,-0.01000
25:-0.01000,-0.01000,-0.01000
26:-0.01000,-0.01000,-0.01000
27:-0.01000,-0.01000,-0.01000
28:-0.01000,-0.01000,-0.01000
29:-0.01000,-0.01000,-0.01000

Number of distributed loads on beamlines:NDL_BL=3

72:0.00000,0.30000
75:0.00000,0.30000
76:0.00000,0.30000

Number of nodal points:NPOIN=1455

0:0.00000,0.00000,-2000.00000
1:0.00000,0.00000,0.00000
2:0.00000,100.00000,0.00000
3:0.00000,200.00000,0.00000
4:0.00000,300.00000,0.00000
5:0.00000,400.00000,0.00000
6:0.00000,500.00000,0.00000
7:0.00000,600.00000,0.00000
8:0.00000,700.00000,0.00000

9:0.00000,800.00000,0.00000
10:0.00000,900.00000,0.00000
11:0.00000,1000.00000,0.00000
12:0.00000,1100.00000,0.00000
13:0.00000,1200.00000,0.00000
14:0.00000,1300.00000,0.00000
15:0.00000,1400.00000,0.00000
16:0.00000,1500.00000,0.00000
17:0.00000,1600.00000,0.00000
18:0.00000,1700.00000,0.00000
19:0.00000,1800.00000,0.00000
20:0.00000,1900.00000,0.00000
21:0.00000,2000.00000,0.00000
22:0.00000,2100.00000,0.00000
23:0.00000,2200.00000,0.00000
24:0.00000,2300.00000,0.00000
25:0.00000,2400.00000,0.00000
26:0.00000,2500.00000,0.00000
27:0.00000,2600.00000,0.00000
28:0.00000,2700.00000,0.00000
29:0.00000,2800.00000,0.00000
30:0.00000,2900.00000,0.00000
31:0.00000,3000.00000,-3000.00000
32:0.00000,3000.00000,0.00000
33:104.16667,2900.00000,0.00000
34:104.16667,3000.00000,0.00000
35:104.16667,2600.00000,0.00000
36:104.16667,2700.00000,0.00000
37:104.16667,2800.00000,0.00000
38:104.16667,0.00000,0.00000
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1453:5000.00000,3000.00000,-3000.00000
1454:5000.00000,3000.00000,0.00000

Mesh of shell(ID=0):

Number of nodal points=63

0->1

1->38

2->69

3->98

4->131
5->170
6->191
7->233
8->255
9->2
10->39
11->70
12->99
13->132
14->158
15->192
16->234
17->256
18->3
19->40
20->71
21->100
22->133
23->171
24->193
25->222
26->257
27->4
28->41
29->72
30->101
31->134
32->172
33->194
34->235
35->258
36->5
37->42
38->73
39->102
40->135
41->173
42->195
43->223
44->259
45->6
46->43
47->74

48->103

49->136

50->159

51->196

52->236

53->260

54->7

55->44

56->75

57->104

58->137

59->174

60->197

61->237

62->261

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=1):

Number of nodal points=63

0->255

1->299

2->310

3->340

4->362

5->393

6->411

7->448

8->468

9->256

10->285

11->311

12->341

13->363

14->385

15->412

16->449

17->469

18->257

19->286

20->312

21->342

22->364

23->394

24->428

25->437

26->470

27->258

28->300

29->313

30->343

31->365

32->395

33->413

34->450

35->471

36->259

37->287

38->314

39->334

40->366

41->396

42->429

43->443

44->472

45->260

46->288

47->315

48->344

49->367

50->397

51->430

52->451

53->473

54->261

55->301

56->316

57->345

58->368

59->398

60->414

61->452

62->474

Number of four-nodes elements=48

0,1,10,9

1,2,11,10
2,3,12,11
3,4,13,12
4,5,14,13
5,6,15,14
6,7,16,15
7,8,17,16
9,10,19,18
10,11,20,19
11,12,21,20
12,13,22,21
13,14,23,22
14,15,24,23
15,16,25,24
16,17,26,25
18,19,28,27
19,20,29,28
20,21,30,29
21,22,31,30
22,23,32,31
23,24,33,32
24,25,34,33
25,26,35,34
27,28,37,36
28,29,38,37
29,30,39,38
30,31,40,39
31,32,41,40
32,33,42,41
33,34,43,42
34,35,44,43
36,37,46,45
37,38,47,46
38,39,48,47
39,40,49,48
40,41,50,49
41,42,51,50
42,43,52,51
43,44,53,52
45,46,55,54
46,47,56,55
47,48,57,56
48,49,58,57
49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=2):

Number of nodal points=63

0->468

1->511

2->527

3->577

4->604

5->623

6->649

7->696

8->722

9->469

10->497

11->528

12->556

13->587

14->618

15->650

16->680

17->711

18->470

19->498

20->529

21->557

22->588

23->624

24->676

25->681

26->723

27->471

28->512

29->530

30->583

31->605

32->625

33->651

34->697

35->724

36->472

37->499

38->531

39->558

40->606

41->626

42->652

43->682

44->725

45->473

46->513

47->532

48->559

49->589

50->627

51->653

52->698

53->712

54->474

55->514

56->533

57->578

58->607

59->628

60->654

61->699

62->726

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=3):

Number of nodal points=63

0->722

1->744

2->780

3->806

4->847

5->878

6->899

7->945

8->961

9->711

10->745

11->775
12->807
13->848
14->868
15->900
16->946
17->962
18->723
19->765
20->781
21->808
22->837
23->879
24->925
25->930
26->963
27->724
28->746
29->782
30->809
31->849
32->880
33->901
34->947
35->964
36->725
37->766
38->783
39->810
40->850
41->881
42->902
43->931
44->965
45->712
46->747
47->784
48->811
49->838
50->869
51->903
52->932
53->966
54->726

55->748

56->785

57->812

58->851

59->882

60->904

61->948

62->967

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=4):

Number of nodal points=63

0->961

1->1004

2->1018

3->1056

4->1070

5->1100

6->1122

7->1148

8->1174

9->962

10->1005

11->1019

12->1044

13->1071

14->1101

15->1140

16->1149

17->1175

18->963

19->992

20->1020

21->1062

22->1072

23->1096

24->1123

25->1150

26->1176

27->964

28->1006

29->1021

30->1063

31->1092

32->1102

33->1124

34->1170

35->1177

36->965

37->993

38->1022

39->1045

40->1073

41->1103

42->1141

43->1151

44->1178

45->966

46->994

47->1023

48->1046

49->1074

50->1104

51->1125

52->1152

53->1179

54->967

55->1007

56->1024

57->1057

58->1075

59->1105

60->1126

61->1153

62->1180

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18
10,11,20,19
11,12,21,20
12,13,22,21
13,14,23,22
14,15,24,23
15,16,25,24
16,17,26,25
18,19,28,27
19,20,29,28
20,21,30,29
21,22,31,30
22,23,32,31
23,24,33,32
24,25,34,33
25,26,35,34
27,28,37,36
28,29,38,37
29,30,39,38
30,31,40,39
31,32,41,40
32,33,42,41
33,34,43,42
34,35,44,43
36,37,46,45
37,38,47,46
38,39,48,47
39,40,49,48
40,41,50,49
41,42,51,50
42,43,52,51
43,44,53,52
45,46,55,54
46,47,56,55
47,48,57,56
48,49,58,57
49,50,59,58
50,51,60,59
51,52,61,60
52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=5):

Number of nodal points=63

0->1174

1->1225
2->1236
3->1272
4->1308
5->1329
6->1360
7->1391
8->1433
9->1175
10->1205
11->1237
12->1273
13->1309
14->1330
15->1361
16->1392
17->1422
18->1176
19->1206
20->1238
21->1274
22->1310
23->1331
24->1362
25->1412
26->1434
27->1177
28->1226
29->1239
30->1275
31->1311
32->1332
33->1363
34->1393
35->1435
36->1178
37->1207
38->1240
39->1276
40->1298
41->1333
42->1364
43->1413
44->1436

45->1179

46->1208

47->1241

48->1267

49->1299

50->1334

51->1365

52->1394

53->1423

54->1180

55->1227

56->1242

57->1277

58->1312

59->1335

60->1366

61->1395

62->1437

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=6):

Number of nodal points=63

0->7

1->44

2->75

3->104

4->137

5->174

6->197

7->237

8->261

9->8

10->45

11->76

12->105

13->138

14->160

15->198

16->238

17->262

18->9
19->46
20->77
21->106
22->139
23->175
24->199
25->224
26->263
27->10
28->47
29->78
30->107
31->140
32->176
33->200
34->239
35->264
36->11
37->48
38->79
39->108
40->141
41->177
42->201
43->225
44->265
45->12
46->49
47->80
48->109
49->142
50->161
51->202
52->240
53->266
54->13
55->50
56->81
57->110
58->143
59->178
60->203
61->241

62->267

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=7):

Number of nodal points=63

0->261

1->301

2->316

3->345

4->368

5->398

6->414

7->452

8->474

9->262

10->289

11->317

12->346

13->369

14->386

15->415

16->453

17->475

18->263

19->290

20->318

21->347

22->370

23->399

24->431

25->438

26->476

27->264

28->302

29->319

30->348

31->371

32->400

33->416

34->454

35->477

36->265

37->291

38->320

39->335

40->372

41->401

42->432

43->444

44->478

45->266

46->292

47->321

48->349

49->373

50->402

51->433

52->455

53->479

54->267

55->303

56->322

57->350

58->374

59->403

60->417

61->456

62->480

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25
18,19,28,27
19,20,29,28
20,21,30,29
21,22,31,30
22,23,32,31
23,24,33,32
24,25,34,33
25,26,35,34
27,28,37,36
28,29,38,37
29,30,39,38
30,31,40,39
31,32,41,40
32,33,42,41
33,34,43,42
34,35,44,43
36,37,46,45
37,38,47,46
38,39,48,47
39,40,49,48
40,41,50,49
41,42,51,50
42,43,52,51
43,44,53,52
45,46,55,54
46,47,56,55
47,48,57,56
48,49,58,57
49,50,59,58
50,51,60,59
51,52,61,60
52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=8):

Number of nodal points=63

0->474

1->514

2->533

3->578

4->607

5->628

6->654

7->699

8->726
9->475
10->500
11->534
12->560
13->590
14->619
15->655
16->683
17->713
18->476
19->501
20->535
21->561
22->591
23->629
24->677
25->684
26->727
27->477
28->515
29->536
30->584
31->608
32->630
33->656
34->700
35->728
36->478
37->502
38->537
39->562
40->609
41->631
42->657
43->685
44->729
45->479
46->516
47->538
48->563
49->592
50->632
51->658

52->701

53->714

54->480

55->517

56->539

57->579

58->610

59->633

60->659

61->702

62->730

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=9):

Number of nodal points=63

0->726

1->748

2->785

3->812

4->851

5->882

6->904

7->948

8->967

9->713

10->749

11->776

12->813

13->852

14->870

15->905

16->949

17->968

18->727

19->767

20->786

21->814

22->839

23->883

24->926

25->933

26->969

27->728

28->750

29->787

30->815

31->853

32->884

33->906

34->950

35->970

36->729

37->768

38->788

39->816

40->854

41->885

42->907

43->934

44->971

45->714

46->751

47->789

48->817

49->840

50->871

51->908

52->935

53->972

54->730

55->752

56->790

57->818

58->855

59->886

60->909

61->951

62->973

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14
6,7,16,15
7,8,17,16
9,10,19,18
10,11,20,19
11,12,21,20
12,13,22,21
13,14,23,22
14,15,24,23
15,16,25,24
16,17,26,25
18,19,28,27
19,20,29,28
20,21,30,29
21,22,31,30
22,23,32,31
23,24,33,32
24,25,34,33
25,26,35,34
27,28,37,36
28,29,38,37
29,30,39,38
30,31,40,39
31,32,41,40
32,33,42,41
33,34,43,42
34,35,44,43
36,37,46,45
37,38,47,46
38,39,48,47
39,40,49,48
40,41,50,49
41,42,51,50
42,43,52,51
43,44,53,52
45,46,55,54
46,47,56,55
47,48,57,56
48,49,58,57
49,50,59,58
50,51,60,59
51,52,61,60
52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=10):

Number of nodal points=63

0->967

1->1007

2->1024

3->1057

4->1075

5->1105

6->1126

7->1153

8->1180

9->968

10->1008

11->1025

12->1047

13->1076

14->1106

15->1142

16->1154

17->1181

18->969

19->995

20->1026

21->1064

22->1077

23->1097

24->1127

25->1155

26->1182

27->970

28->1009

29->1027

30->1065

31->1093

32->1107

33->1128

34->1171

35->1183

36->971

37->996

38->1028

39->1048

40->1078

41->1108

42->1143

43->1156

44->1184

45->972

46->997

47->1029

48->1049

49->1079

50->1109

51->1129

52->1157

53->1185

54->973

55->1010

56->1030

57->1058

58->1080

59->1110

60->1130

61->1158

62->1186

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=11):

Number of nodal points=63

0->1180

1->1227

2->1242

3->1277

4->1312

5->1335

6->1366

7->1395

8->1437

9->1181

10->1209

11->1243

12->1278

13->1313

14->1336

15->1367
16->1396
17->1424
18->1182
19->1210
20->1244
21->1279
22->1314
23->1337
24->1368
25->1414
26->1438
27->1183
28->1228
29->1245
30->1280
31->1315
32->1338
33->1369
34->1397
35->1439
36->1184
37->1211
38->1246
39->1281
40->1300
41->1339
42->1370
43->1415
44->1440
45->1185
46->1212
47->1247
48->1268
49->1301
50->1340
51->1371
52->1398
53->1425
54->1186
55->1229
56->1248
57->1282
58->1316

59->1341

60->1372

61->1399

62->1441

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=12):

Number of nodal points=63

0->13

1->50

2->81

3->110

4->143

5->178

6->203

7->241

8->267

9->14

10->51

11->82

12->111

13->144

14->162

15->204

16->242

17->268

18->15

19->52

20->83

21->112

22->145

23->179

24->205

25->226

26->269

27->16

28->53

29->84

30->113

31->146

32->180

33->206

34->243

35->270

36->17

37->54

38->85

39->114

40->147

41->181

42->207

43->227

44->271

45->18

46->55

47->86

48->115

49->148

50->163

51->208

52->244

53->272

54->19

55->56

56->87

57->116

58->149

59->182

60->209

61->245

62->273

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22
14,15,24,23
15,16,25,24
16,17,26,25
18,19,28,27
19,20,29,28
20,21,30,29
21,22,31,30
22,23,32,31
23,24,33,32
24,25,34,33
25,26,35,34
27,28,37,36
28,29,38,37
29,30,39,38
30,31,40,39
31,32,41,40
32,33,42,41
33,34,43,42
34,35,44,43
36,37,46,45
37,38,47,46
38,39,48,47
39,40,49,48
40,41,50,49
41,42,51,50
42,43,52,51
43,44,53,52
45,46,55,54
46,47,56,55
47,48,57,56
48,49,58,57
49,50,59,58
50,51,60,59
51,52,61,60
52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=13):

Number of nodal points=63

0->267

1->303

2->322

3->350

4->374

5->403
6->417
7->456
8->480
9->268
10->293
11->323
12->351
13->375
14->387
15->418
16->457
17->481
18->269
19->294
20->324
21->352
22->376
23->404
24->434
25->439
26->482
27->270
28->304
29->325
30->353
31->377
32->405
33->419
34->458
35->483
36->271
37->295
38->326
39->336
40->378
41->406
42->435
43->445
44->484
45->272
46->296
47->327
48->354

49->379

50->407

51->436

52->459

53->485

54->273

55->305

56->328

57->355

58->380

59->408

60->420

61->460

62->486

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=14):

Number of nodal points=63

0->480

1->517

2->539

3->579

4->610

5->633

6->659

7->702

8->730

9->481

10->503

11->540

12->564

13->593

14->620

15->660

16->686

17->715

18->482

19->504

20->541

21->565

22->594

23->634

24->678

25->687

26->731

27->483

28->518

29->542

30->585

31->611

32->635

33->661

34->703

35->732

36->484

37->505

38->543

39->566

40->612

41->636

42->662

43->688

44->733

45->485

46->519

47->544

48->567

49->595

50->637

51->663

52->704

53->716

54->486

55->520

56->545

57->580

58->613

59->638

60->664

61->705

62->734

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11
3,4,13,12
4,5,14,13
5,6,15,14
6,7,16,15
7,8,17,16
9,10,19,18
10,11,20,19
11,12,21,20
12,13,22,21
13,14,23,22
14,15,24,23
15,16,25,24
16,17,26,25
18,19,28,27
19,20,29,28
20,21,30,29
21,22,31,30
22,23,32,31
23,24,33,32
24,25,34,33
25,26,35,34
27,28,37,36
28,29,38,37
29,30,39,38
30,31,40,39
31,32,41,40
32,33,42,41
33,34,43,42
34,35,44,43
36,37,46,45
37,38,47,46
38,39,48,47
39,40,49,48
40,41,50,49
41,42,51,50
42,43,52,51
43,44,53,52
45,46,55,54
46,47,56,55
47,48,57,56
48,49,58,57
49,50,59,58
50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=15):

Number of nodal points=63

0->730

1->752

2->790

3->818

4->855

5->886

6->909

7->951

8->973

9->715

10->753

11->777

12->819

13->856

14->872

15->910

16->952

17->974

18->731

19->769

20->791

21->820

22->841

23->887

24->927

25->936

26->975

27->732

28->754

29->792

30->821

31->857

32->888

33->911

34->953

35->976

36->733

37->770

38->793

39->822

40->858

41->889

42->912

43->937

44->977

45->716

46->755

47->794

48->823

49->842

50->873

51->913

52->938

53->978

54->734

55->756

56->795

57->824

58->859

59->890

60->914

61->954

62->979

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=16):

Number of nodal points=63

0->973

1->1010

2->1030

3->1058

4->1080

5->1110

6->1130

7->1158

8->1186

9->974

10->1011

11->1031

12->1050
13->1081
14->1111
15->1144
16->1159
17->1187
18->975
19->998
20->1032
21->1066
22->1082
23->1098
24->1131
25->1160
26->1188
27->976
28->1012
29->1033
30->1067
31->1094
32->1112
33->1132
34->1172
35->1189
36->977
37->999
38->1034
39->1051
40->1083
41->1113
42->1145
43->1161
44->1190
45->978
46->1000
47->1035
48->1052
49->1084
50->1114
51->1133
52->1162
53->1191
54->979
55->1013

56->1036

57->1059

58->1085

59->1115

60->1134

61->1163

62->1192

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=17):

Number of nodal points=63

0->1186

1->1229

2->1248

3->1282

4->1316

5->1341

6->1372

7->1399

8->1441

9->1187

10->1213

11->1249

12->1283

13->1317

14->1342

15->1373

16->1400

17->1426

18->1188

19->1214

20->1250

21->1284

22->1318

23->1343

24->1374

25->1416

26->1442

27->1189

28->1230

29->1251

30->1285

31->1319

32->1344

33->1375

34->1401

35->1443

36->1190

37->1215

38->1252

39->1286

40->1302

41->1345

42->1376

43->1417

44->1444

45->1191

46->1216

47->1253

48->1269

49->1303

50->1346

51->1377

52->1402

53->1427

54->1192

55->1231

56->1254

57->1287

58->1320

59->1347

60->1378

61->1403

62->1445

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=18):

Number of nodal points=63

0->19

1->56

2->87
3->116
4->149
5->182
6->209
7->245
8->273
9->20
10->57
11->88
12->117
13->150
14->164
15->210
16->246
17->274
18->21
19->58
20->89
21->118
22->151
23->183
24->211
25->228
26->275
27->22
28->59
29->90
30->119
31->152
32->184
33->212
34->247
35->276
36->23
37->60
38->91
39->120
40->153
41->185
42->213
43->229
44->277
45->24

46->61

47->92

48->121

49->154

50->165

51->214

52->248

53->278

54->25

55->62

56->93

57->122

58->155

59->186

60->215

61->249

62->279

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=20):

Number of nodal points=63

0->486

1->520

2->545

3->580

4->613

5->638

6->664

7->705

8->734

9->487

10->506

11->546

12->568

13->596

14->621

15->665

16->689

17->717

18->488

19->507
20->547
21->569
22->597
23->639
24->679
25->690
26->735
27->489
28->521
29->548
30->586
31->614
32->640
33->666
34->706
35->736
36->490
37->508
38->549
39->570
40->615
41->641
42->667
43->691
44->737
45->491
46->522
47->550
48->571
49->598
50->642
51->668
52->707
53->718
54->492
55->523
56->551
57->581
58->616
59->643
60->669
61->708
62->738

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=21):

Number of nodal points=63

0->734

1->756

2->795

3->824

4->859

5->890

6->914

7->954

8->979

9->717

10->757

11->778

12->825

13->860

14->874

15->915

16->955

17->980

18->735

19->771

20->796

21->826

22->843

23->891

24->928

25->939

26->981

27->736

28->758

29->797

30->827

31->861

32->892

33->916

34->956

35->982

36->737

37->772

38->798

39->828

40->862

41->893

42->917

43->940

44->983

45->718

46->759

47->799

48->829

49->844

50->875

51->918

52->941

53->984

54->738

55->760

56->800

57->830

58->863

59->894

60->919

61->957

62->985

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=23):

Number of nodal points=63

0->1192

1->1231

2->1254

3->1287

4->1320

5->1347

6->1378

7->1403

8->1445

9->1193

10->1217

11->1255

12->1288

13->1321

14->1348

15->1379

16->1404

17->1428

18->1194

19->1218

20->1256

21->1289

22->1322

23->1349

24->1380

25->1418

26->1446

27->1195

28->1232

29->1257

30->1290

31->1323

32->1350

33->1381

34->1405

35->1447

36->1196

37->1219

38->1258

39->1291

40->1304

41->1351

42->1382

43->1419

44->1448

45->1197

46->1220

47->1259

48->1270

49->1305

50->1352

51->1383

52->1406

53->1429

54->1198

55->1233

56->1260

57->1292

58->1324

59->1353

60->1384

61->1407

62->1449

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=24):

Number of nodal points=63

0->25

1->62

2->93

3->122

4->155

5->186

6->215

7->249

8->279

9->26

10->63

11->94

12->123

13->156

14->166

15->216

16->230

17->280

18->27

19->35

20->66

21->124

22->128

23->187

24->217

25->231

26->252

27->28

28->36

29->67

30->125

31->129

32->167

33->218

34->232

35->253

36->29

37->37

38->68

39->95

40->130

41->168

42->188

43->219

44->254

45->30

46->33

47->64

48->96

49->126

50->157

51->189

52->220

53->250

54->32

55->34

56->65

57->97

58->127

59->169

60->190

61->221

62->251

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15
7,8,17,16
9,10,19,18
10,11,20,19
11,12,21,20
12,13,22,21
13,14,23,22
14,15,24,23
15,16,25,24
16,17,26,25
18,19,28,27
19,20,29,28
20,21,30,29
21,22,31,30
22,23,32,31
23,24,33,32
24,25,34,33
25,26,35,34
27,28,37,36
28,29,38,37
29,30,39,38
30,31,40,39
31,32,41,40
32,33,42,41
33,34,43,42
34,35,44,43
36,37,46,45
37,38,47,46
38,39,48,47
39,40,49,48
40,41,50,49
41,42,51,50
42,43,52,51
43,44,53,52
45,46,55,54
46,47,56,55
47,48,57,56
48,49,58,57
49,50,59,58
50,51,60,59
51,52,61,60
52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=25):

Number of nodal points=63

0->279

1->306

2->329

3->356

4->381

5->409

6->421

7->461

8->492

9->280

10->284

11->330

12->357

13->382

14->388

15->422

16->462

17->493

18->252

19->297

20->331

21->337

22->383

23->410

24->423

25->440

26->463

27->253

28->298

29->332

30->358

31->359

32->389

33->424

34->446

35->464

36->254

37->281

38->307

39->338

40->384

41->390

42->425

43->441

44->465

45->250

46->282

47->308

48->333

49->360

50->391

51->426

52->442

53->466

54->251

55->283

56->309

57->339

58->361

59->392

60->427

61->447

62->467

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=26):

Number of nodal points=63

0->492

1->523

2->551

3->581

4->616

5->643

6->669

7->708

8->738

9->493

10->494

11->552

12->572

13->599

14->622

15->670

16->692
17->719
18->463
19->509
20->553
21->573
22->600
23->644
24->671
25->693
26->739
27->464
28->524
29->554
30->582
31->617
32->645
33->672
34->709
35->740
36->465
37->495
38->525
39->574
40->601
41->646
42->673
43->694
44->741
45->466
46->496
47->526
48->575
49->602
50->647
51->674
52->695
53->720
54->467
55->510
56->555
57->576
58->603
59->648

60->675

61->710

62->743

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=27):

Number of nodal points=63

0->738

1->760

2->800

3->830

4->863

5->894

6->919

7->957

8->985

9->719

10->761

11->779

12->831

13->864

14->876

15->920

16->958

17->986

18->739

19->773

20->801

21->832

22->845

23->895

24->929

25->942

26->987

27->740

28->762

29->802

30->833

31->865

32->896

33->921

34->959

35->988

36->741

37->774

38->803

39->834

40->866

41->897

42->922

43->943

44->989

45->720

46->763

47->804

48->835

49->846

50->877

51->923

52->944

53->990

54->743

55->764

56->805

57->836

58->867

59->898

60->924

61->960

62->991

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=28):

Number of nodal points=63

0->985

1->1014

2->1037

3->1060

4->1086

5->1116

6->1135
7->1164
8->1198
9->986
10->1015
11->1038
12->1053
13->1087
14->1117
15->1146
16->1165
17->1199
18->987
19->1001
20->1039
21->1068
22->1088
23->1099
24->1136
25->1166
26->1200
27->988
28->1016
29->1040
30->1069
31->1095
32->1118
33->1137
34->1173
35->1201
36->989
37->1002
38->1041
39->1054
40->1089
41->1119
42->1147
43->1167
44->1202
45->990
46->1003
47->1042
48->1055
49->1090

50->1120

51->1138

52->1168

53->1203

54->991

55->1017

56->1043

57->1061

58->1091

59->1121

60->1139

61->1169

62->1204

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12

4,5,14,13

5,6,15,14

6,7,16,15

7,8,17,16

9,10,19,18

10,11,20,19

11,12,21,20

12,13,22,21

13,14,23,22

14,15,24,23

15,16,25,24

16,17,26,25

18,19,28,27

19,20,29,28

20,21,30,29

21,22,31,30

22,23,32,31

23,24,33,32

24,25,34,33

25,26,35,34

27,28,37,36

28,29,38,37

29,30,39,38

30,31,40,39

31,32,41,40

32,33,42,41

33,34,43,42

34,35,44,43

36,37,46,45

37,38,47,46

38,39,48,47

39,40,49,48

40,41,50,49

41,42,51,50

42,43,52,51

43,44,53,52

45,46,55,54

46,47,56,55

47,48,57,56

48,49,58,57

49,50,59,58

50,51,60,59

51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of shell(ID=29):

Number of nodal points=63

0->1198

1->1233

2->1260

3->1292

4->1324

5->1353

6->1384

7->1407

8->1449

9->1199

10->1221

11->1261

12->1293

13->1325

14->1354

15->1385

16->1408

17->1430

18->1200

19->1222

20->1262

21->1294

22->1326

23->1355

24->1386

25->1420

26->1450

27->1201

28->1234

29->1263

30->1295

31->1327

32->1356

33->1387

34->1409

35->1451

36->1202

37->1223

38->1264

39->1296

40->1306

41->1357

42->1388

43->1421

44->1452

45->1203

46->1224

47->1265

48->1271

49->1307

50->1358

51->1389

52->1410

53->1431

54->1204

55->1235

56->1266

57->1297

58->1328

59->1359

60->1390

61->1411

62->1454

Number of four-nodes elements=48

0,1,10,9

1,2,11,10

2,3,12,11

3,4,13,12
4,5,14,13
5,6,15,14
6,7,16,15
7,8,17,16
9,10,19,18
10,11,20,19
11,12,21,20
12,13,22,21
13,14,23,22
14,15,24,23
15,16,25,24
16,17,26,25
18,19,28,27
19,20,29,28
20,21,30,29
21,22,31,30
22,23,32,31
23,24,33,32
24,25,34,33
25,26,35,34
27,28,37,36
28,29,38,37
29,30,39,38
30,31,40,39
31,32,41,40
32,33,42,41
33,34,43,42
34,35,44,43
36,37,46,45
37,38,47,46
38,39,48,47
39,40,49,48
40,41,50,49
41,42,51,50
42,43,52,51
43,44,53,52
45,46,55,54
46,47,56,55
47,48,57,56
48,49,58,57
49,50,59,58
50,51,60,59
51,52,61,60

52,53,62,61

Number of three-nodes elements=0

Mesh of beamline(ID=0):

Number of nodal points=7

0->32

1->30

2->29

3->28

4->27

5->26

6->25

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=1):

Number of nodal points=7

0->25

1->24

2->23

3->22

4->21

5->20

6->19

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=2):

Number of nodal points=7

0->19

1->18

2->17

3->16

4->15

5->14

6->13

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=3):

Number of nodal points=7

0->13

1->12

2->11

3->10

4->9

5->8

6->7

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=4):

Number of nodal points=7

0->7

1->6

2->5

3->4

4->3

5->2

6->1

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=5):

Number of nodal points=9

0->1

1->38

2->69

3->98

4->131

5->170

6->191

7->233

8->255

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=6):

Number of nodal points=9

0->255

1->299

2->310

3->340

4->362

5->393

6->411

7->448

8->468

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=7):

Number of nodal points=9

0->468

1->511

2->527

3->577

4->604

5->623

6->649

7->696

8->722

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=8):

Number of nodal points=9

0->722

1->744

2->780

3->806

4->847

5->878

6->899

7->945

8->961

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=9):

Number of nodal points=9

0->961

1->1004

2->1018

3->1056

4->1070

5->1100

6->1122

7->1148

8->1174

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=10):

Number of nodal points=9

0->1174

1->1225

2->1236

3->1272

4->1308

5->1329

6->1360

7->1391

8->1433

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=11):

Number of nodal points=7

0->1433

1->1422

2->1434

3->1435

4->1436

5->1423

6->1437

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=12):

Number of nodal points=7

0->1437

1->1424

2->1438

3->1439

4->1440

5->1425

6->1441

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=13):

Number of nodal points=7

0->1441

1->1426

2->1442

3->1443

4->1444

5->1427

6->1445

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=14):

Number of nodal points=7

0->1445

1->1428

2->1446

3->1447

4->1448

5->1429

6->1449

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=15):

Number of nodal points=7

0->1449

1->1430

2->1450

3->1451

4->1452

5->1431

6->1454

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=16):

Number of nodal points=9

0->1454

1->1411

2->1390

3->1359

4->1328

5->1297

6->1266

7->1235

8->1204

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=17):

Number of nodal points=9

0->1204

1->1169

2->1139

3->1121

4->1091

5->1061

6->1043

7->1017

8->991

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=18):

Number of nodal points=9

0->991

1->960

2->924

3->898

4->867

5->836

6->805

7->764

8->743

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=19):

Number of nodal points=9

0->743

1->710

2->675

3->648

4->603

5->576

6->555

7->510

8->467

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=20):

Number of nodal points=9

0->467

1->447

2->427

3->392

4->361

5->339

6->309

7->283

8->251

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=21):

Number of nodal points=9

0->251

1->221

2->190

3->169

4->127

5->97

6->65

7->34

8->32

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=22):

Number of nodal points=9

0->7

1->44

2->75

3->104

4->137

5->174

6->197

7->237

8->261

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=23):

Number of nodal points=9

0->261

1->301

2->316

3->345

4->368

5->398

6->414

7->452

8->474

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=24):

Number of nodal points=9

0->474

1->514

2->533

3->578

4->607

5->628

6->654

7->699

8->726

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=25):

Number of nodal points=9

0->726

1->748

2->785

3->812

4->851

5->882

6->904

7->948

8->967

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=26):

Number of nodal points=9

0->967

1->1007

2->1024

3->1057

4->1075

5->1105

6->1126

7->1153

8->1180

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=27):

Number of nodal points=9

0->1180

1->1227

2->1242

3->1277

4->1312

5->1335

6->1366

7->1395

8->1437

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=28):

Number of nodal points=9

0->13

1->50

2->81

3->110

4->143

5->178

6->203

7->241

8->267

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=29):

Number of nodal points=9

0->267

1->303

2->322

3->350

4->374

5->403

6->417

7->456

8->480

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=30):

Number of nodal points=9

0->480

1->517

2->539

3->579

4->610

5->633

6->659

7->702

8->730

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=31):

Number of nodal points=9

0->730

1->752

2->790

3->818

4->855

5->886

6->909

7->951

8->973

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=32):

Number of nodal points=9

0->973

1->1010

2->1030

3->1058

4->1080

5->1110

6->1130

7->1158

8->1186

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=33):

Number of nodal points=9

0->1186

1->1229

2->1248

3->1282

4->1316

5->1341

6->1372

7->1399

8->1441

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=34):

Number of nodal points=9

0->19

1->56

2->87

3->116

4->149

5->182

6->209

7->245

8->273

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=35):

Number of nodal points=9

0->273

1->305

2->328

3->355

4->380

5->408

6->420

7->460

8->486

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=36):

Number of nodal points=9

0->486

1->520

2->545

3->580

4->613

5->638

6->664

7->705

8->734

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=37):

Number of nodal points=9

0->734

1->756

2->795

3->824

4->859

5->890

6->914

7->954

8->979

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=38):

Number of nodal points=9

0->979

1->1013

2->1036

3->1059

4->1085

5->1115

6->1134

7->1163

8->1192

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=39):

Number of nodal points=9

0->1192

1->1231

2->1254

3->1287

4->1320

5->1347

6->1378

7->1403

8->1445

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=40):

Number of nodal points=9

0->25

1->62

2->93

3->122

4->155

5->186

6->215

7->249

8->279

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=41):

Number of nodal points=9

0->279

1->306

2->329

3->356

4->381

5->409

6->421

7->461

8->492

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=42):

Number of nodal points=9

0->492

1->523

2->551

3->581

4->616

5->643

6->669

7->708

8->738

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=43):

Number of nodal points=9

0->738

1->760

2->800

3->830

4->863

5->894

6->919

7->957

8->985

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=44):

Number of nodal points=9

0->985

1->1014

2->1037

3->1060

4->1086

5->1116

6->1135

7->1164

8->1198

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=45):

Number of nodal points=9

0->1198

1->1233

2->1260

3->1292

4->1324

5->1353

6->1384

7->1407

8->1449

Number of beam elements=8

0,1

1,2

2,3

3,4

4,5

5,6

6,7

7,8

Mesh of beamline(ID=47):

Number of nodal points=7

0->492

1->491

2->490

3->489

4->488

5->487

6->486

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=48):

Number of nodal points=7

0->467

1->466

2->465

3->464

4->463

5->493

6->492

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=49):

Number of nodal points=7

0->486

1->485

2->484

3->483

4->482

5->481

6->480

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=50):

Number of nodal points=7

0->480

1->479

2->478

3->477

4->476

5->475

6->474

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=51):

Number of nodal points=7

0->474

1->473

2->472

3->471

4->470

5->469

6->468

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=52):

Number of nodal points=7

0->1204

1->1203

2->1202

3->1201

4->1200

5->1199

6->1198

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=53):

Number of nodal points=7

0->1198

1->1197

2->1196

3->1195

4->1194

5->1193

6->1192

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=54):

Number of nodal points=7

0->1192

1->1191

2->1190

3->1189

4->1188

5->1187

6->1186

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=55):

Number of nodal points=7

0->1186

1->1185

2->1184

3->1183

4->1182

5->1181

6->1180

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=56):

Number of nodal points=7

0->1180

1->1179

2->1178

3->1177

4->1176

5->1175

6->1174

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=57):

Number of nodal points=7

0->251

1->250

2->254

3->253

4->252

5->280

6->279

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=58):

Number of nodal points=7

0->279

1->278

2->277

3->276

4->275

5->274

6->273

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=59):

Number of nodal points=7

0->273

1->272

2->271

3->270

4->269

5->268

6->267

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=60):

Number of nodal points=7

0->267

1->266

2->265

3->264

4->263

5->262

6->261

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=61):

Number of nodal points=7

0->261

1->260

2->259

3->258

4->257

5->256

6->255

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=62):

Number of nodal points=7

0->991

1->990

2->989

3->988

4->987

5->986

6->985

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=63):

Number of nodal points=7

0->985

1->984

2->983

3->982

4->981

5->980

6->979

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=64):

Number of nodal points=7

0->979

1->978

2->977

3->976

4->975

5->974

6->973

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=65):

Number of nodal points=7

0->973

1->972

2->971

3->970

4->969

5->968

6->967

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=66):

Number of nodal points=7

0->967

1->966

2->965

3->964

4->963

5->962

6->961

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=67):

Number of nodal points=7

0->743

1->720

2->741

3->740

4->739

5->719

6->738

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=68):

Number of nodal points=7

0->738

1->718

2->737

3->736

4->735

5->717

6->734

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=69):

Number of nodal points=7

0->734

1->716

2->733

3->732

4->731

5->715

6->730

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=70):

Number of nodal points=7

0->730

1->714

2->729

3->728

4->727

5->713

6->726

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=71):

Number of nodal points=7

0->726

1->712

2->725

3->724

4->723

5->711

6->722

Number of beam elements=6

0,1

1,2

2,3

3,4

4,5

5,6

Mesh of beamline(ID=72):

Number of nodal points=2

0->32

1->31

Number of beam elements=1

0,1

Mesh of beamline(ID=73):

Number of nodal points=2

0->1

1->0

Number of beam elements=1

0,1

Mesh of beamline(ID=74):

Number of nodal points=2

0->1433

1->1432

Number of beam elements=1

0,1

Mesh of beamline(ID=75):

Number of nodal points=2

0->1454

1->1453

Number of beam elements=1

0,1

Mesh of beamline(ID=76):

Number of nodal points=2

0->743

1->742

Number of beam elements=1

0,1

Mesh of beamline(ID=77):

Number of nodal points=2

0->722

1->721

Number of beam elements=1

0,1

Mesh of beamline(ID=81):

Number of nodal points=2

```

0->1453
1->743
Number of beam elements=1
0,1
Mesh of beamline(ID=82):
Number of nodal points=2
0->743
1->31
Number of beam elements=1
0,1
Mesh of beamline(ID=83):
Number of nodal points=2
0->722
1->1432
Number of beam elements=1
0,1
Mesh of beamline(ID=84):
Number of nodal points=2
0->0
1->722
Number of beam elements=1
0,1
Mesh of beamline(ID=85):
Number of nodal points=2
0->31
1->1
Number of beam elements=1
0,1
Mesh of beamline(ID=86):
Number of nodal points=2
0->1453
1->1433
Number of beam elements=1
0,1
Number of restricted nodal points:NRN=6
0:1 1 1 1 1 1
31:1 1 1 1 1 1
721:1 1 1 1 1 1
742:1 1 1 1 1 1
1432:1 1 1 1 1 1
1453:1 1 1 1 1 1
Number of forces:NFOR=8
273<0.00000,0.00000,-2000.00000,0.00000,0.00000,0.00000>
279<0.00000,0.00000,-2000.00000,0.00000,0.00000,0.00000>

```

```
486<0.00000,0.00000,-2000.00000,0.00000,0.00000,0.00000>  
492<0.00000,0.00000,-2000.00000,0.00000,0.00000,0.00000>  
979<0.00000,0.00000,-2000.00000,0.00000,0.00000,0.00000>  
985<0.00000,0.00000,-2000.00000,0.00000,0.00000,0.00000>  
1192<0.00000,0.00000,-2000.00000,0.00000,0.00000,0.00000>  
1198<0.00000,0.00000,-2000.00000,0.00000,0.00000,0.00000>  
###end###
```

图 13 船艏模型-钓台