

生成梁焊缝的初应力，初应力分布形式参见王国周《钢结构原理与设计》

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!建立好模型

.....

/SOLU

!\*

ANTYPE,0

/INPUT,'input','txt',

/INPUT,'output1','txt',

!\*

ISFILE,READ,1,txt, ,0

SOLVE

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!定义残余应力矩阵

I=1

fy=310e6

!定义单元中心坐标数组，初应力数组

\*DIM,ElcCenter,ARRAY,NumNode,3,1, , ,

\*DIM,ElcIS,ARRAY,NumNode,1,1, , ,

\*DO,I, 1, NumNode,1

!得到单元中心坐标

\*GET,ElcCenter(I,1,1),ELEM,I,CENT,X

\*GET,ElcCenter(I,2,1),ELEM,I,CENT,Y

\*GET,ElcCenter(I,3,1),ELEM,I,CENT,Z

!焊缝位置在 X=1.0 到 1.05 之间

\*IF,ElcCenter(I,1,1),GT,1,THEN

  \*IF,ElcCenter(I,1,1),LT,1.05,THEN

    \*IF,ElcCenter(I,2,1),GT,0.5,THEN

      !上翼缘初始应力

        ElcIS(I,1,1)=-20\*fy\*ElcCenter(I,3,1)\*\*2+0.3\*fy

    \*endif

  \*IF,ElcCenter(I,2,1),LT,0.0,THEN

    !下翼缘初始应力

      ElcIS(I,1,1)=-20\*fy\*ElcCenter(I,3,1)\*\*2+0.3\*fy

  \*endif

  !腹板初始应力

  \*if,ElcCenter(I,2,1),GE,0.0,THEN

    \*IF,ELECENTER(I,2,1),LE,0.5,THEN

      ElcIS(I,1,1)=4.076\*fy\*(ElcCenter(I,2,1)-0.5)\*\*2

      ElcIS(I,1,1)=ElcIS(I,1,1)-0.719\*fy

    \*IF,ElcIS(I,1,1),LT,-0.3\*fy,THEN

      ElcIS(I,1,1)=-0.3\*fy

    \*ENDIF

```
*ENDIF
*ENDIF
*ENDIF
*ENDIF
*ENDDO
```

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!输出应力数值

```
*CFOPEN,'1','txt',''
*DO,I,1,3840
!*IF,ElemIS(I,1,1),ne,0.,then
*VWRITE,'!'
(A)
*VWRITE,'! Stress for element', I
(A,F)
*VWRITE,'!'
(A)
*VWRITE,'eis,',I
(A,F)
P=ElemIS(I,1,1)
*VWRITE,P,0.,0.,0.,0.,0.
(E,E,E,E,E,E)
!*ENDIF
*ENDDO
*CFCLOS
```

