# 6月24日汇报PPT

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# 目录

CONTENT

# 0. 说明

- **采用位移载荷而不是力载荷的原因：**

① 相较于力载荷，位移载荷计算更容易达到收敛。

② 想要实现压入的模拟效果，就需要产生位移从而使接触面逐渐增大。

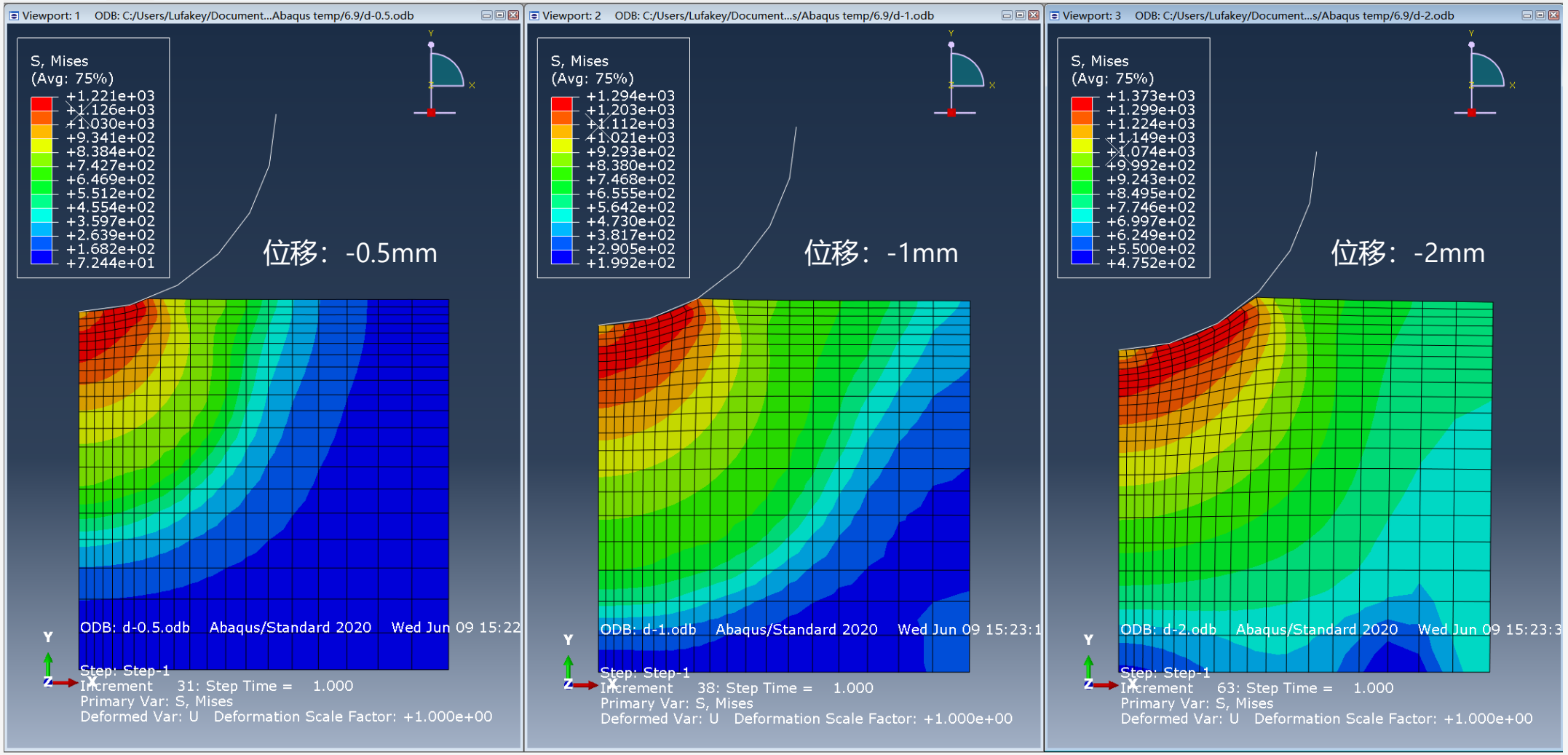
③ 可以认为压入的深度越大所需施加的力就越大。

- **模型是二维平面的原因：**

实际是轴对称模型，通过在Abaqus菜单中设置旋转角度就会显示为三维模型，若采用球形压头则结果理论上与三维模型无异。若采用正四棱锥体压头，则需要建立三维模型。

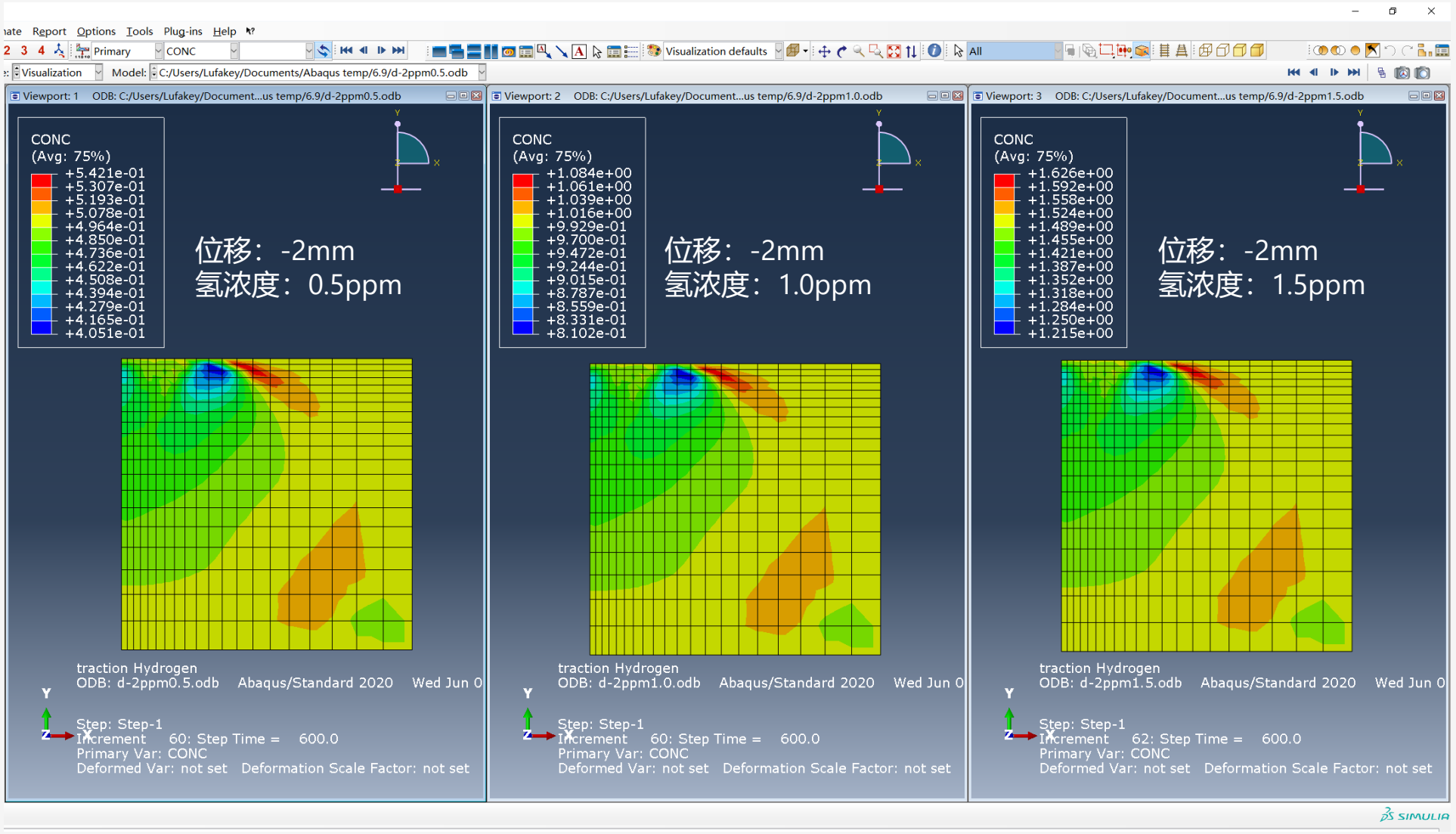
# 应力云图

Northeastern University

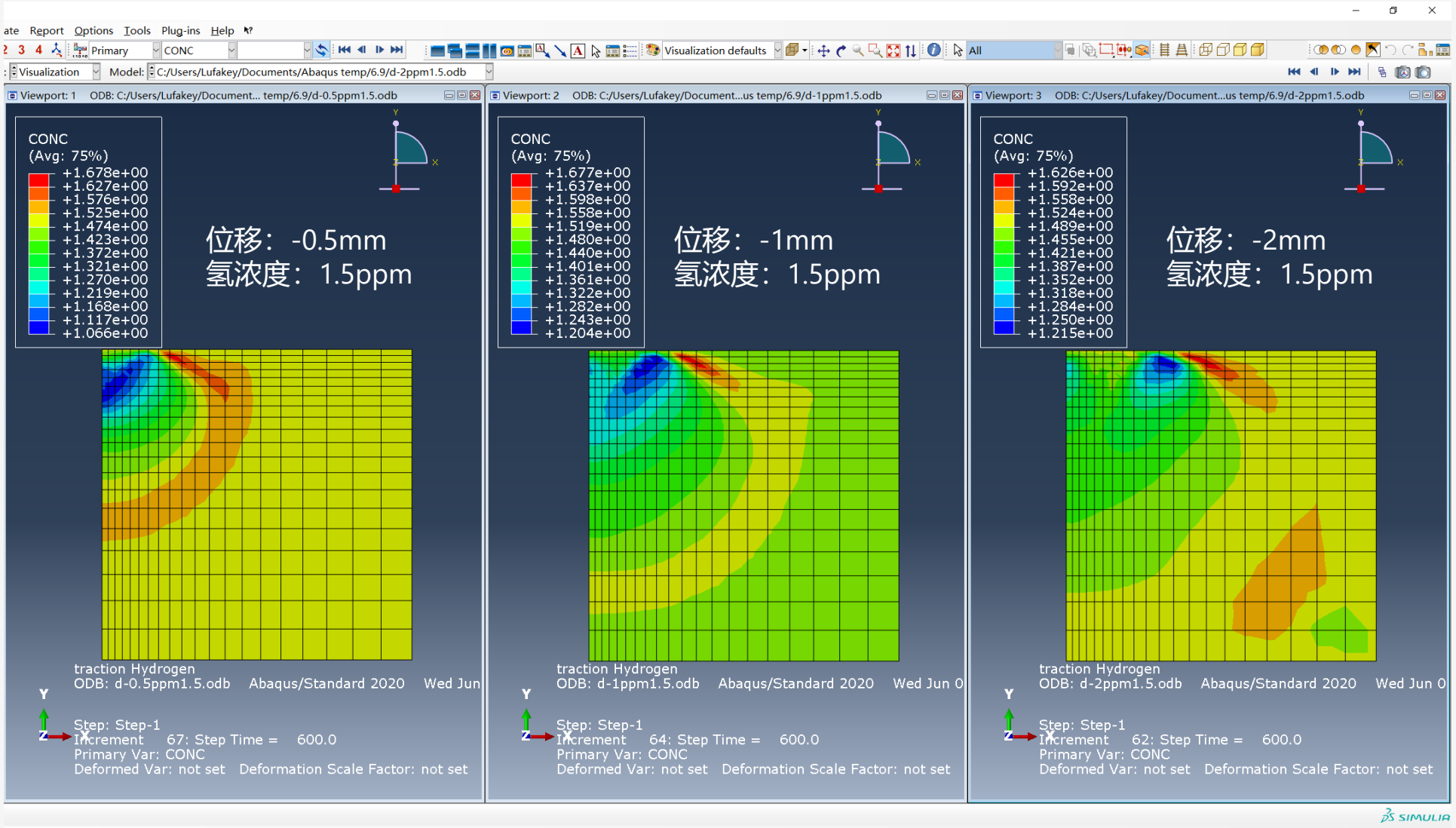


# 1. 同位移、不同氢浓度下的氢扩散

Northeastern University



# 2. 不同位移、同氢浓度下的氢扩散



# Keywords

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## *KAPPA

This option is used to introduce temperature- and pressure-driven mass diffusion using the material parameters $\kappa_s$ and $\kappa_p$, respectively. It must appear immediately after the *DIFFUSIVITY option. For each use of the *DIFFUSIVITY option, *KAPPA can be used once with TYPE=TEMP and once with TYPE=PRESS. The *KAPPA, TYPE=TEMP and *DIFFUSIVITY, LAW=FICK options are mutually exclusive.

- Optional parameters
- Data lines to define the Soret effect factor (TYPE=TEMP)
- Data lines to define the pressure stress factor (TYPE=PRESS)

### Data lines to define the pressure stress factor (TYPE=PRESS):

**First line:**

1. Pressure stress factor, $\kappa_p$. (Units of $F^{-1}L^2$.)
2. Concentration, $c$.
3. Temperature, $\theta$.
4. First field variable.
5. Second field variable.
6. Etc., up to five field variables.

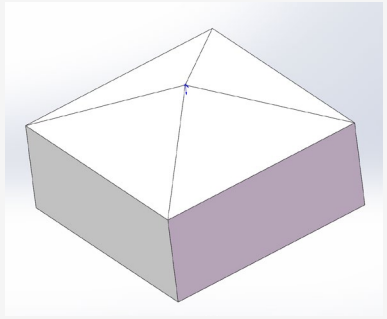
```
15   *KAPPA, TYPE=PRESS
16         0.,    0.
17    11.466, 1000.
```

**Subsequent lines (only needed if the DEPENDENCIES parameter has a value greater than five):**

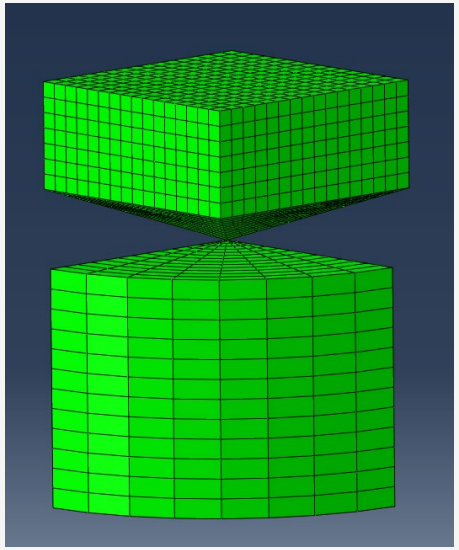
1. Sixth field variable.
2. Etc., up to eight field variables per line.

Repeat this set of data lines as often as necessary to define $\kappa_p$ as a function of concentration, temperature, and other predefined field variables.

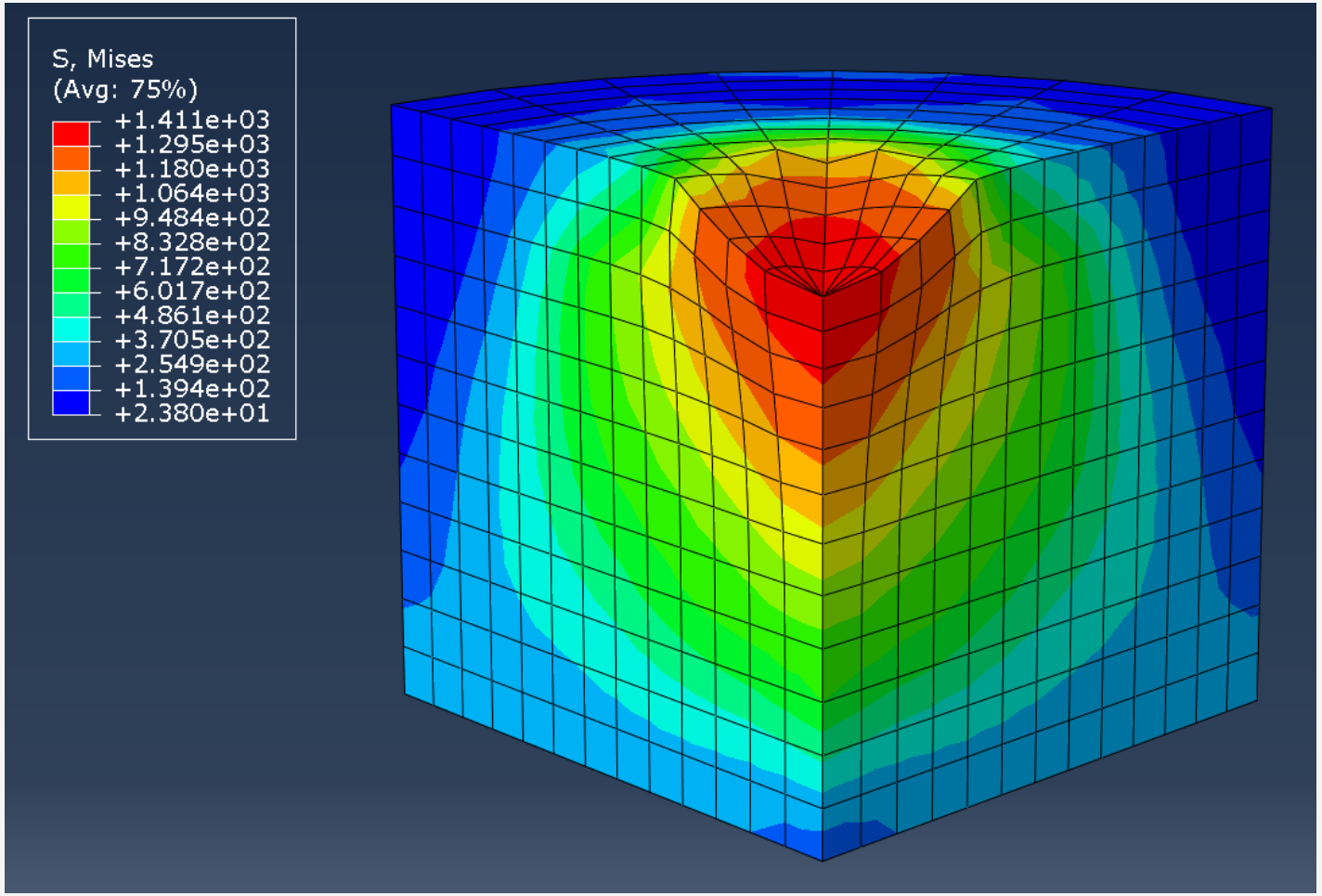
# 3. 维氏压痕



压头模型



装配体




应力场

# 汇报结束，谢谢