

ECAL强度初步计算

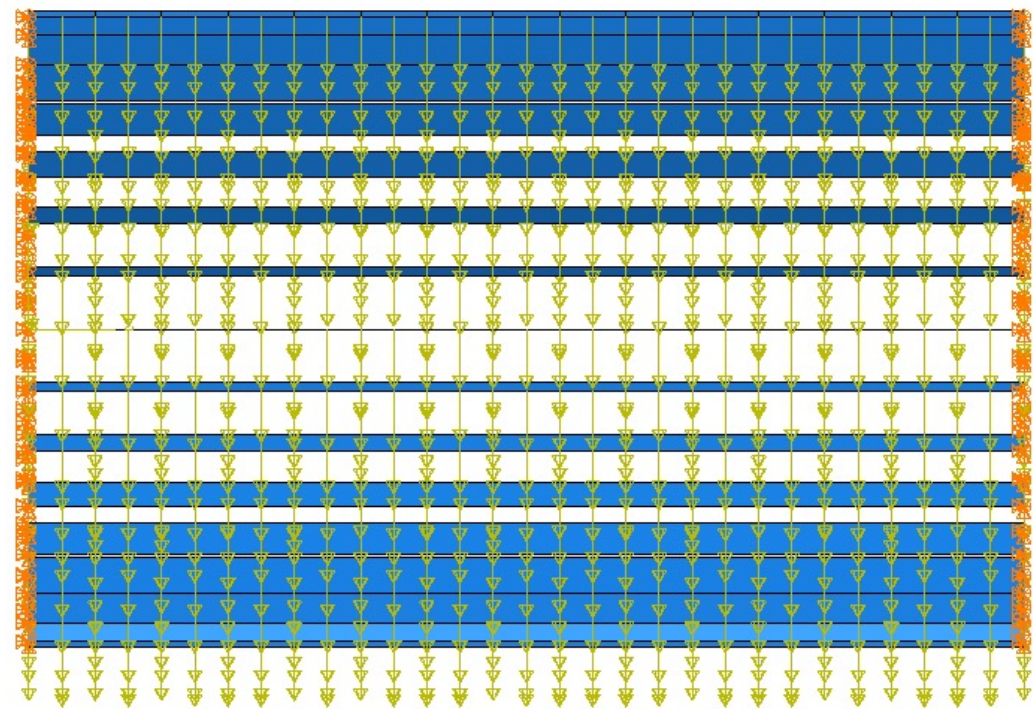
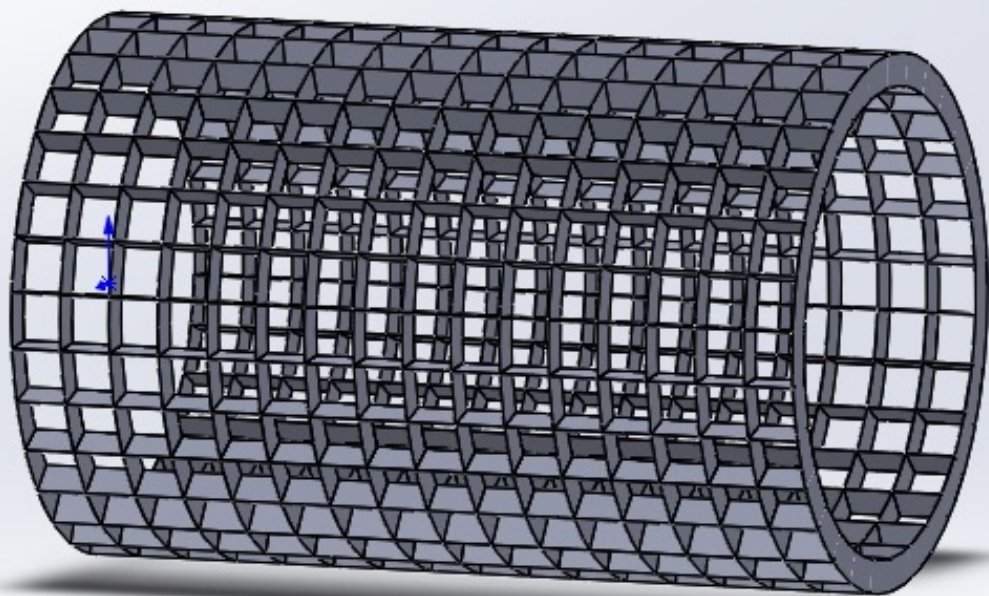
侯少静

04/19/2024

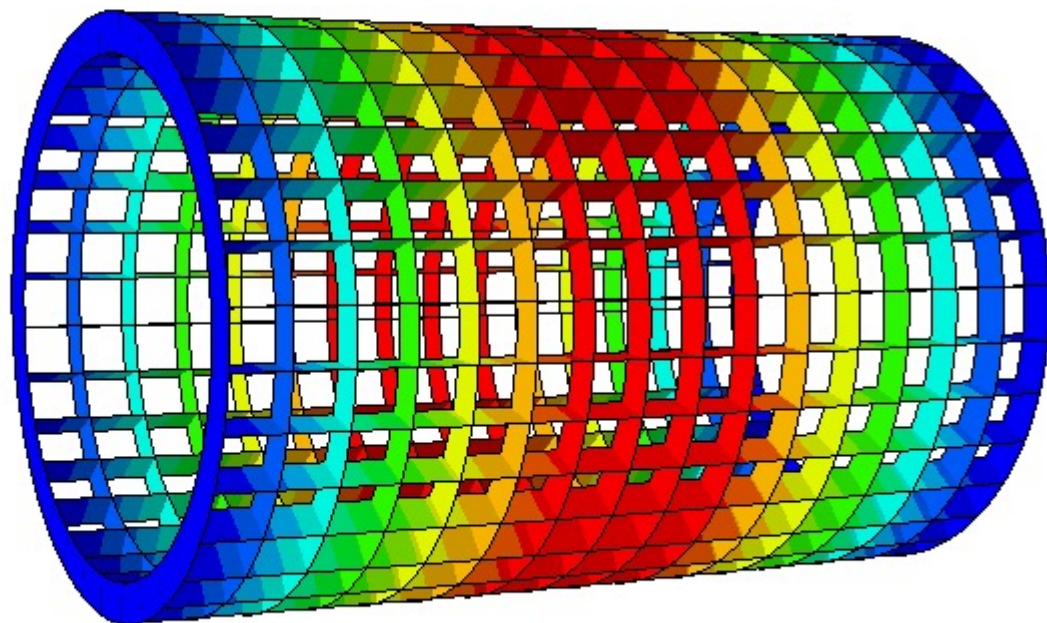
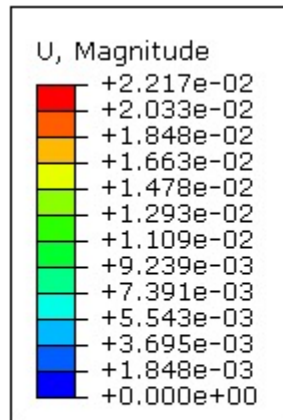
32等分，壁厚10mm

两端约束

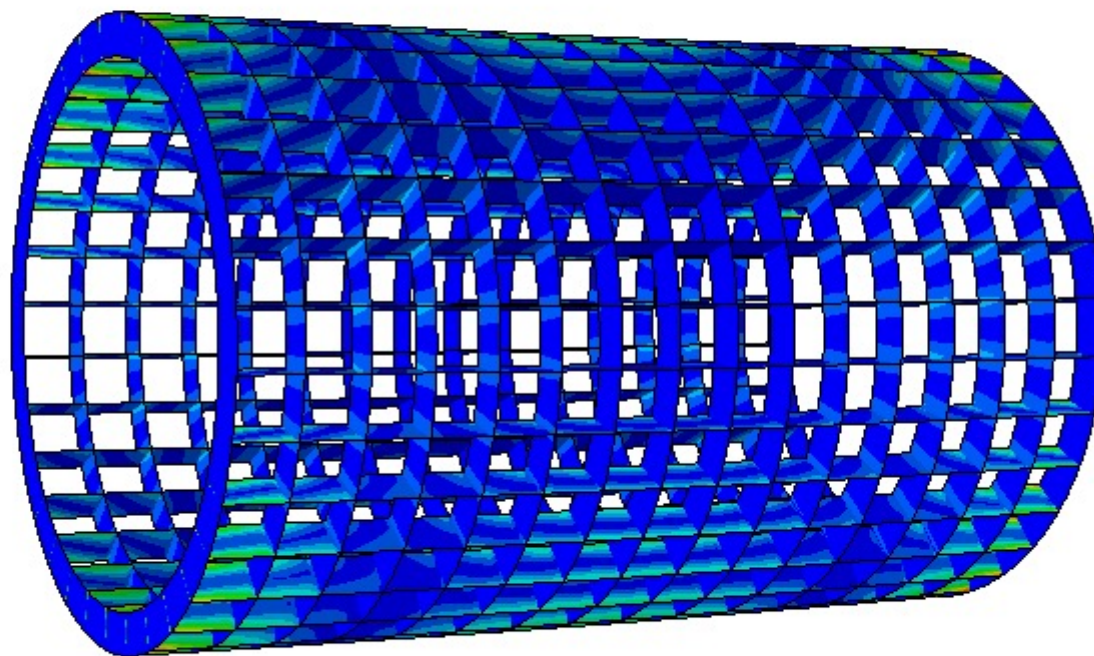
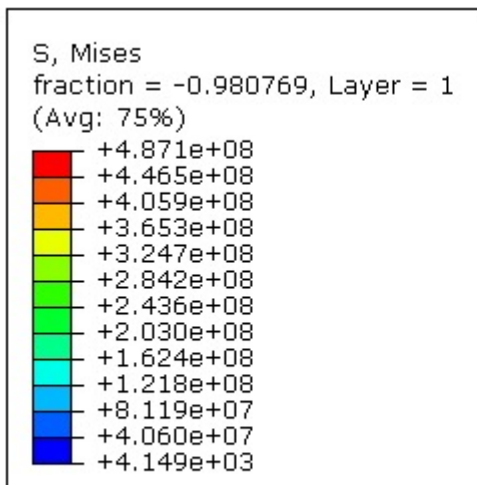
荷载150T



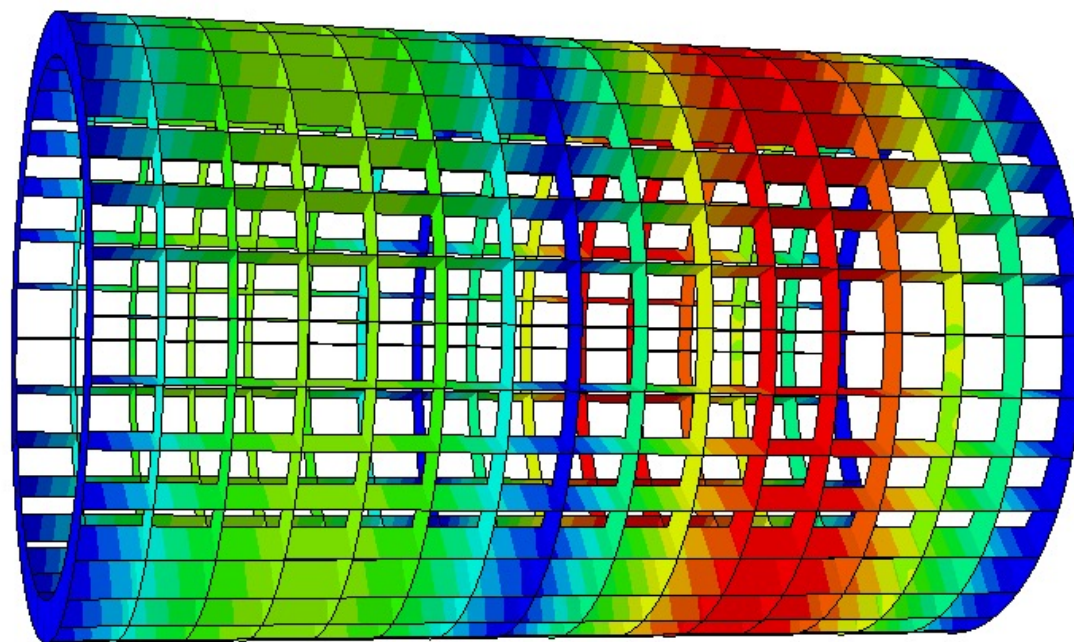
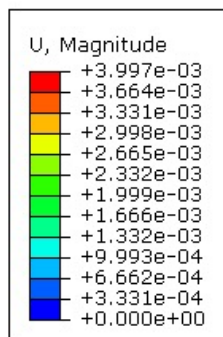
变形2.2cm



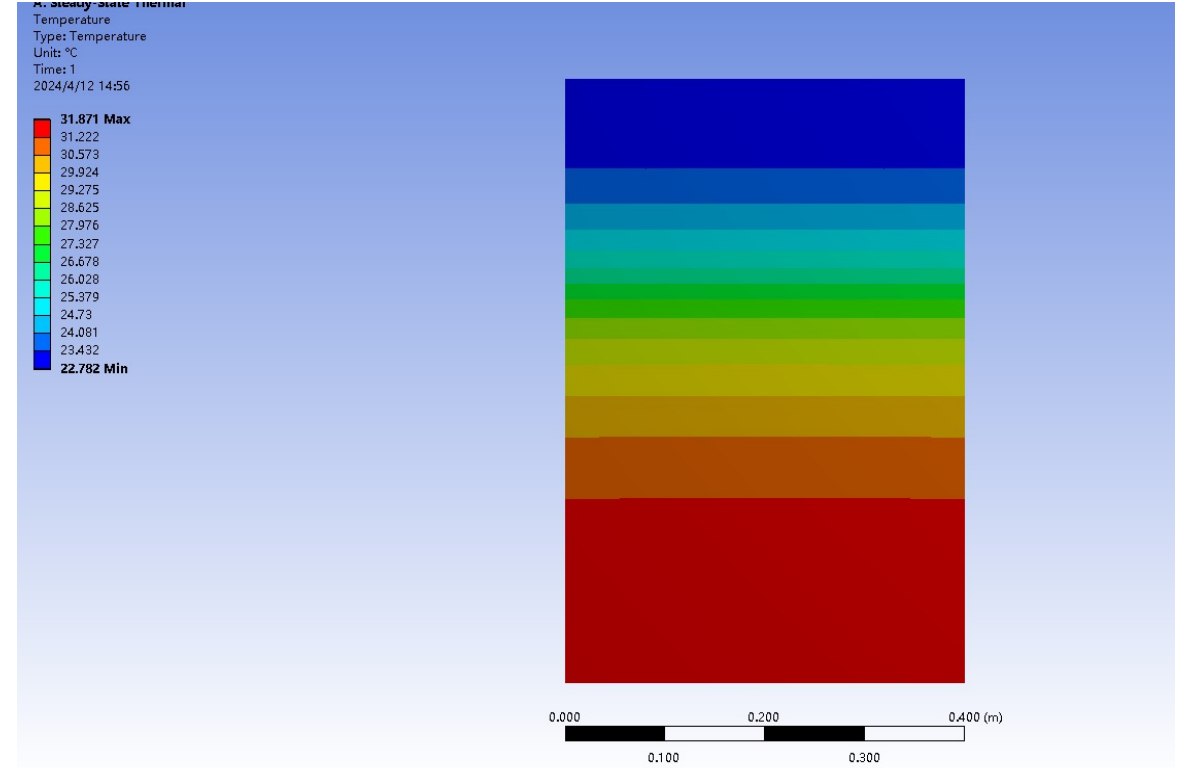
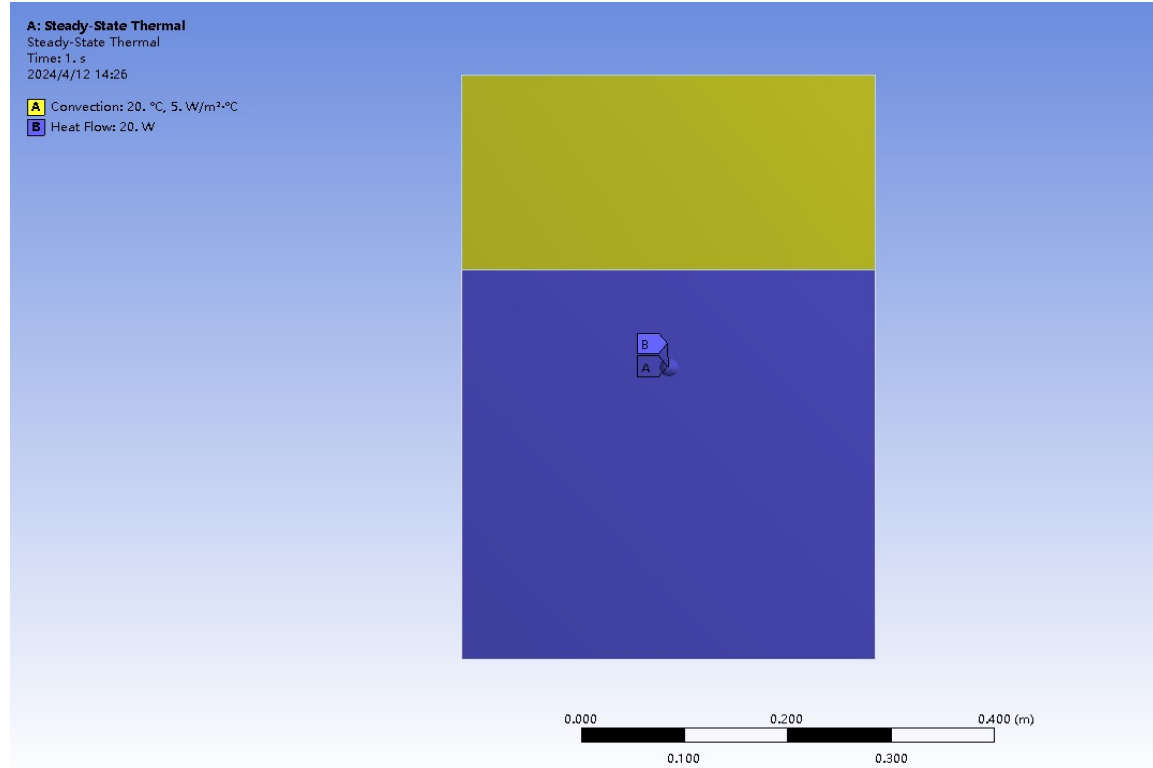
应力487MPa



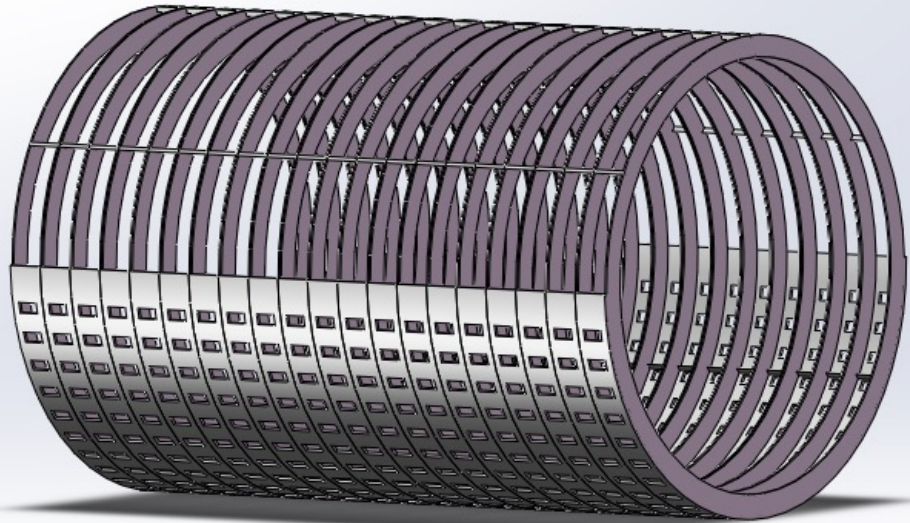
两端+中间约束
变形降到4mm。



厚度0.5mm, RRR=60的无氧铜材质, 空气对流换热系统取最小 $5\text{W}/\text{m}^2\text{K}$, 底部功率 20W , 计算结果如下

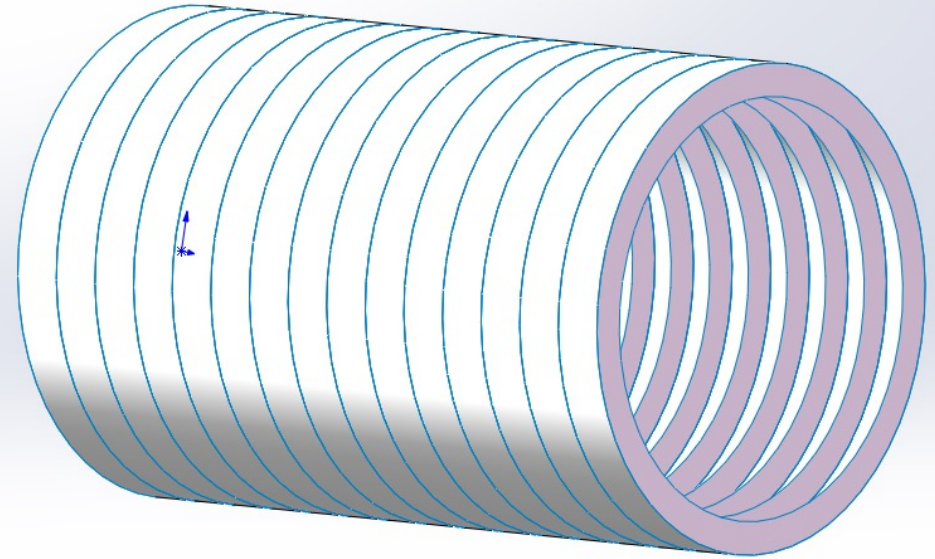


Stereo ECAL



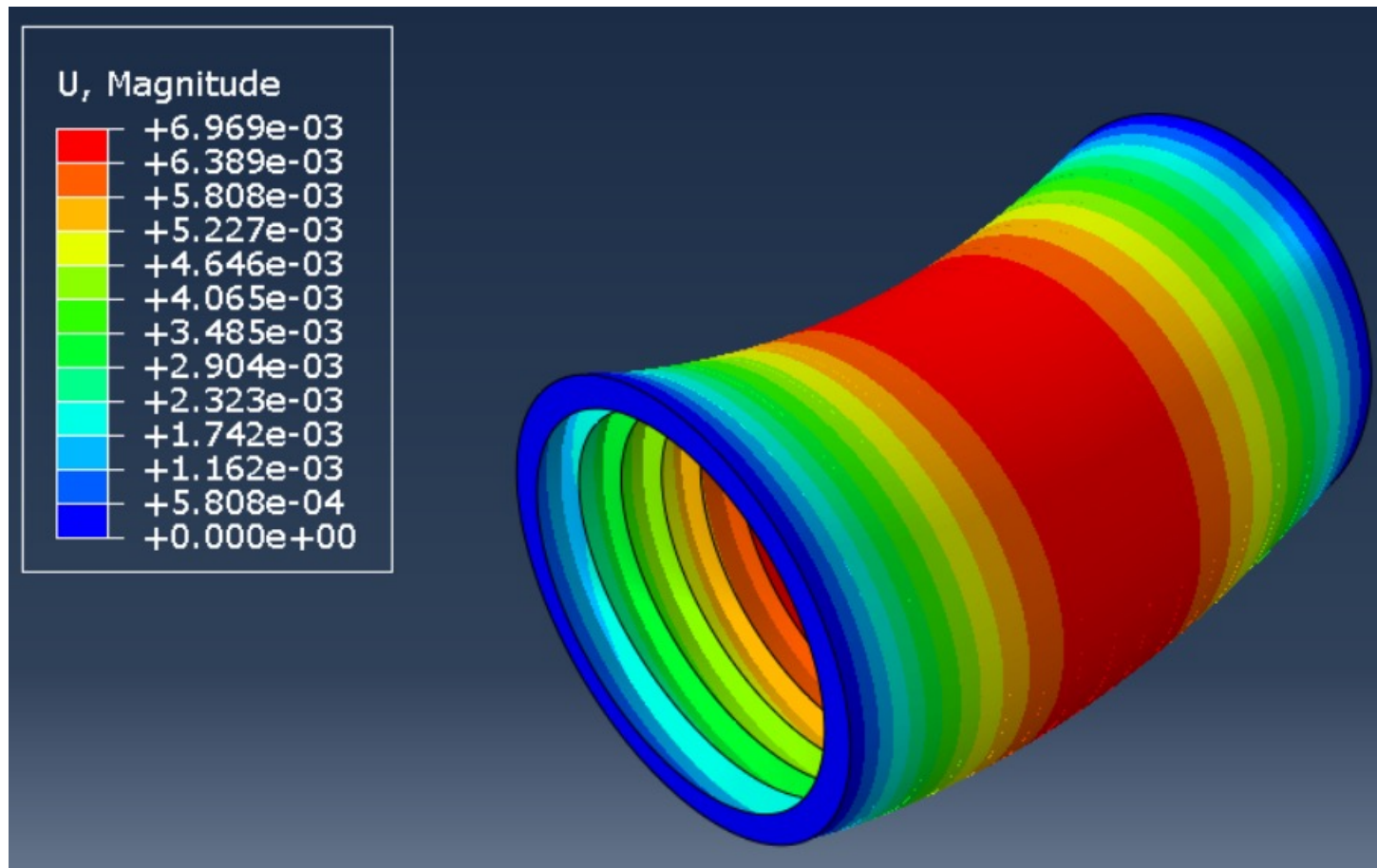
实际结构

实际件义 /

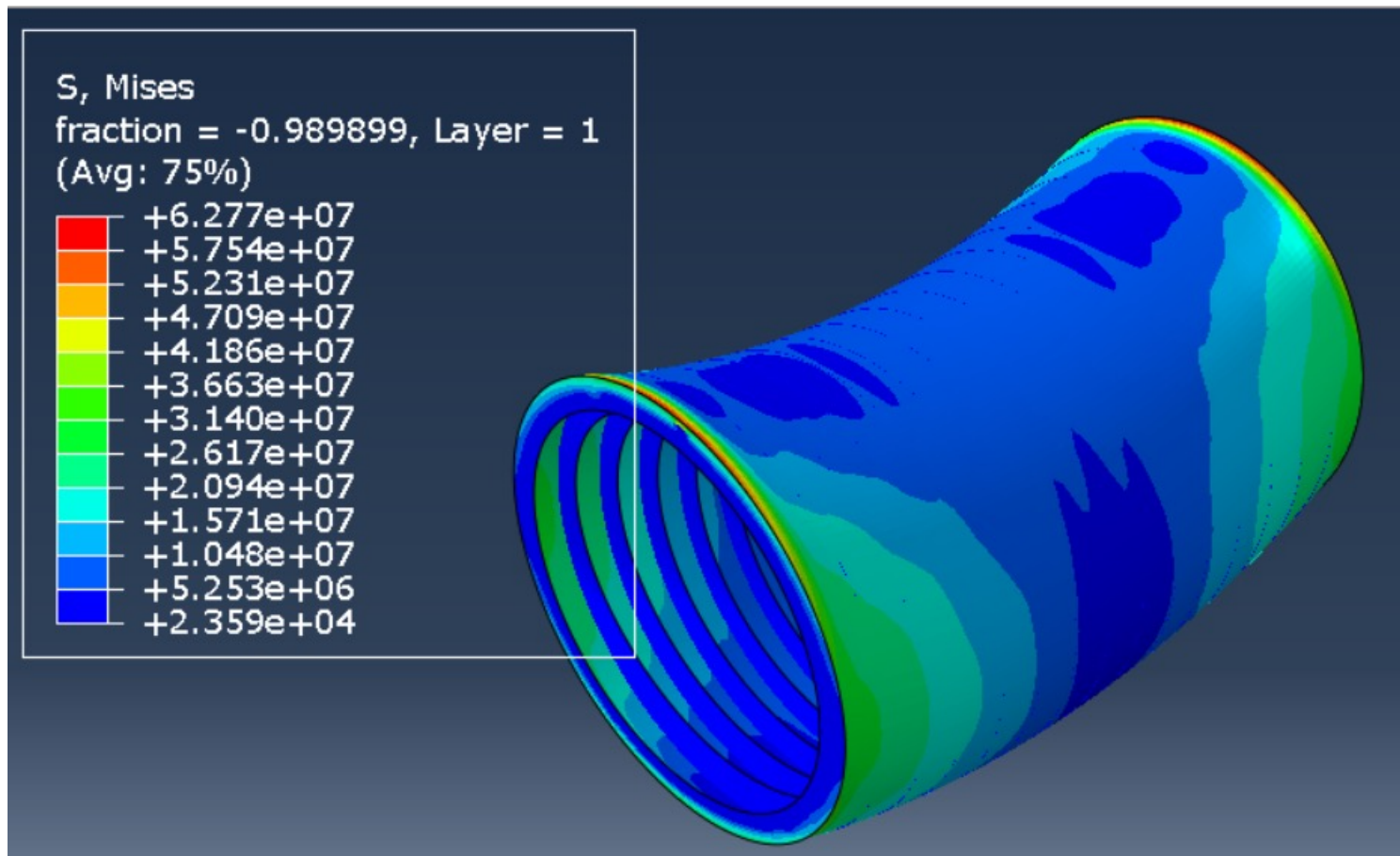


简化结构

变形最大为6.97mm



变形应力为62.7MPa



TSAIW值为0.3

