

EuroCirCol $\cos\theta$ 16 T dipole 3D mechanical model

B.Caiffi,

P. Fabricatore, S.Farinon, S. Mariotto, A. Pampaloni, A.M. Ricci, M. Sorbi, M. Statera

End Spacers

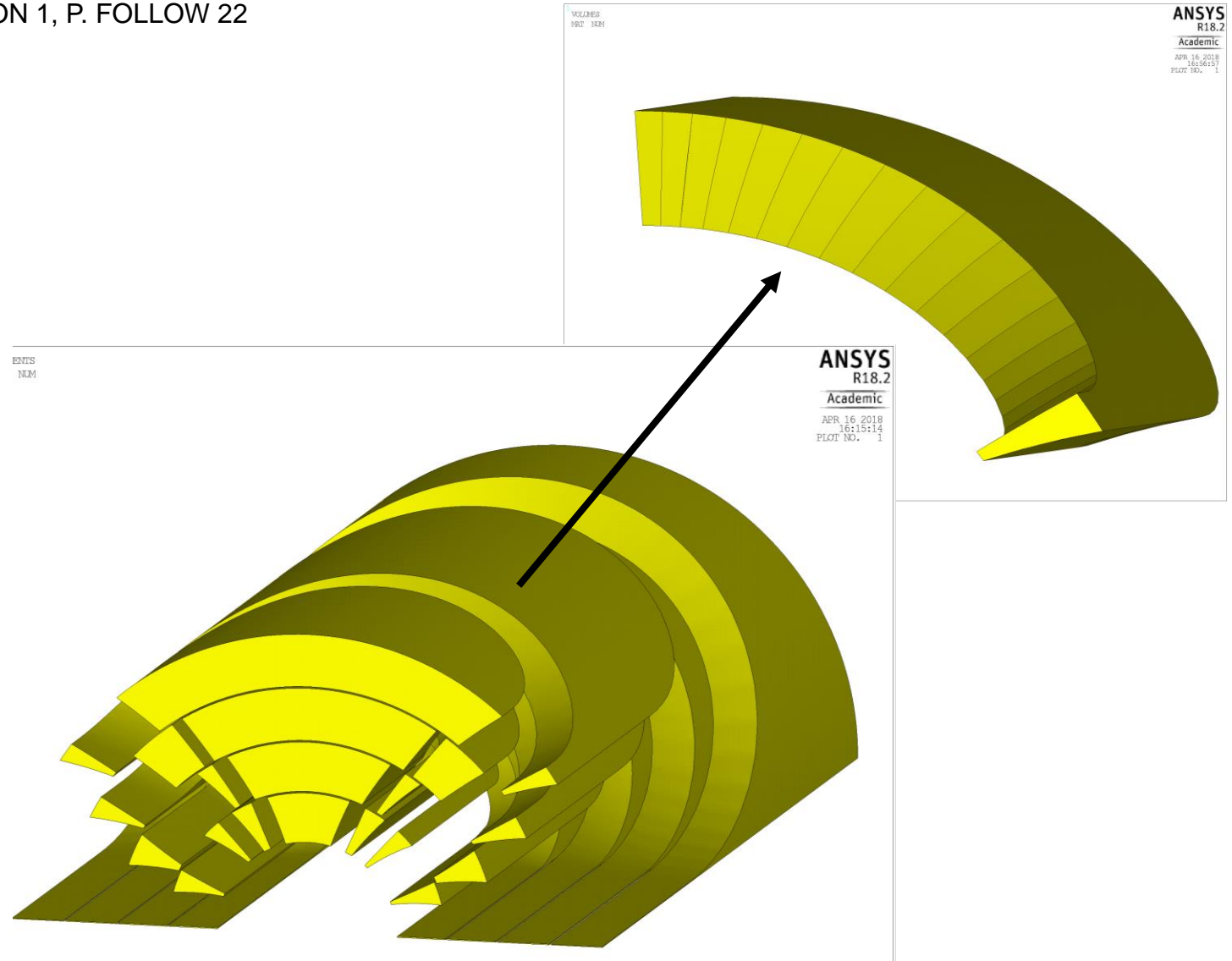
.cnc Roxie output

ANSYS “home-
made” macro

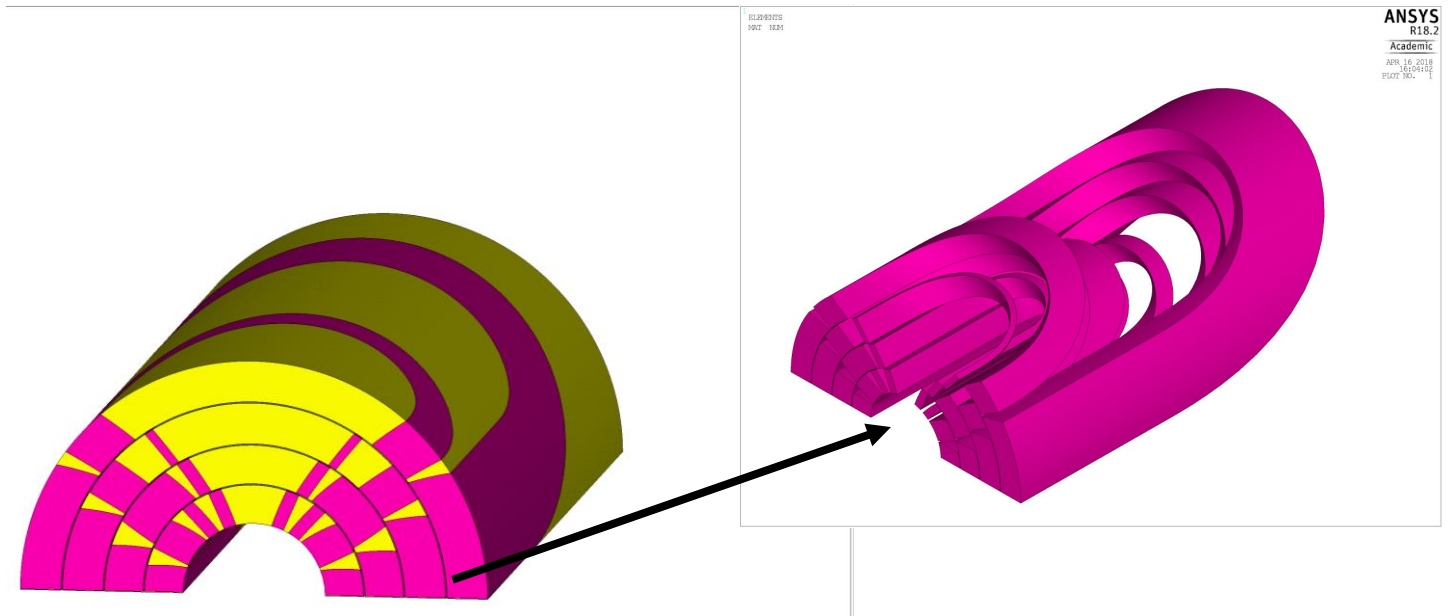
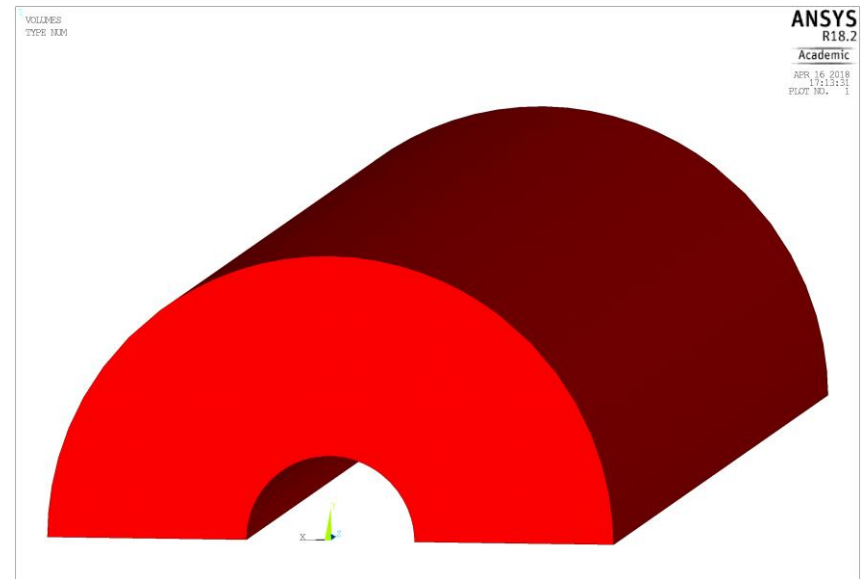
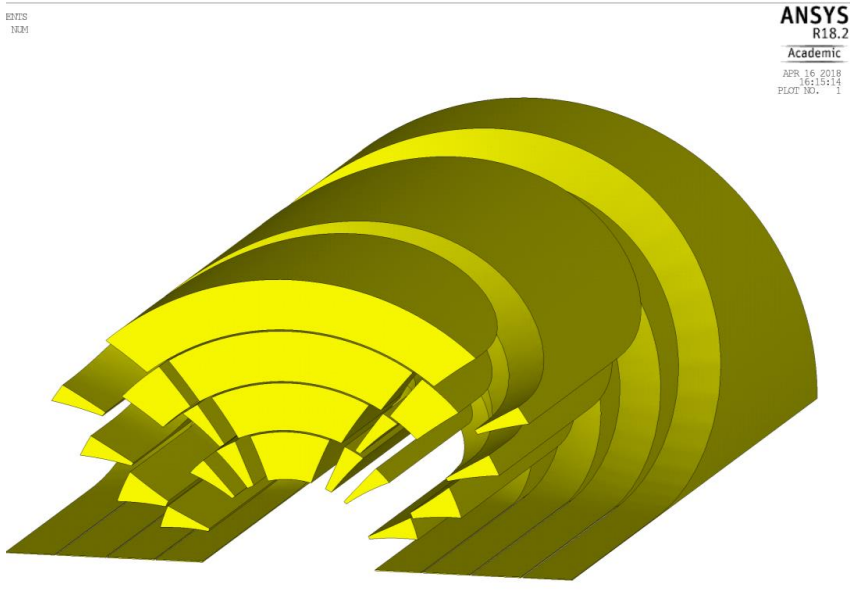
ANSYS Geometry

```
$$ WEDGE 12 INNER, POLYGON 1, P. FOLLOW 22
```

```
$$ X(mm) Y(mm) Z(mm)
p 53.518 41.625 0.000
p 53.518 41.625 895.448
p 53.418 41.753 911.478
p 53.169 42.070 919.875
p 52.677 42.684 928.301
p 51.858 43.675 936.724
p 50.624 45.101 945.056
p 48.887 46.977 953.170
p 46.573 49.273 960.908
p 43.634 51.893 968.109
p 40.093 54.675 974.593
p 36.045 57.425 980.229
p 31.659 59.954 984.951
p 27.153 62.125 988.762
p 22.709 63.884 991.749
p 18.412 65.252 994.053
p 14.465 66.239 995.745
p 10.817 66.932 996.973
p 7.561 67.377 997.809
p 4.690 67.638 998.333
p 2.228 67.763 998.610
p 0.000 67.800 998.696
```



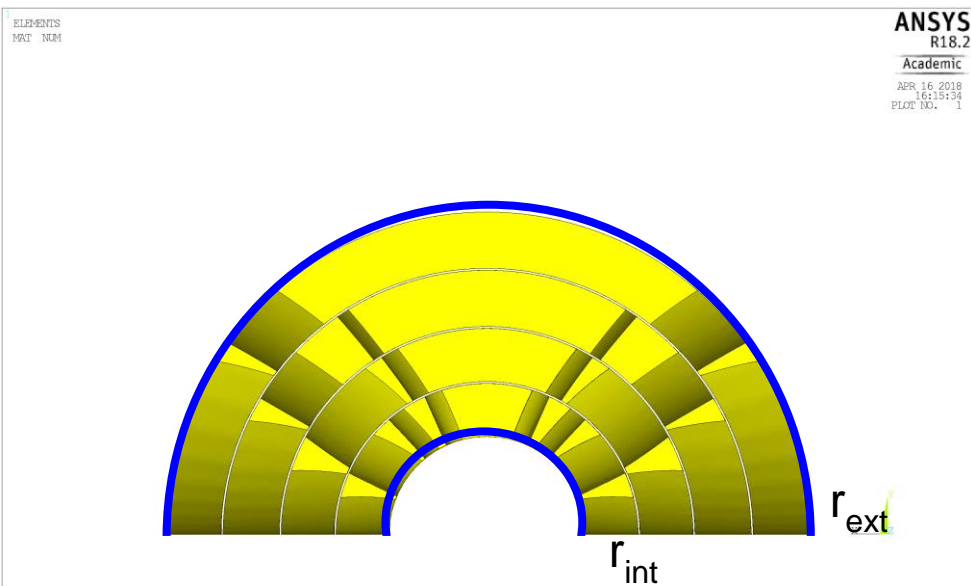
Conductors



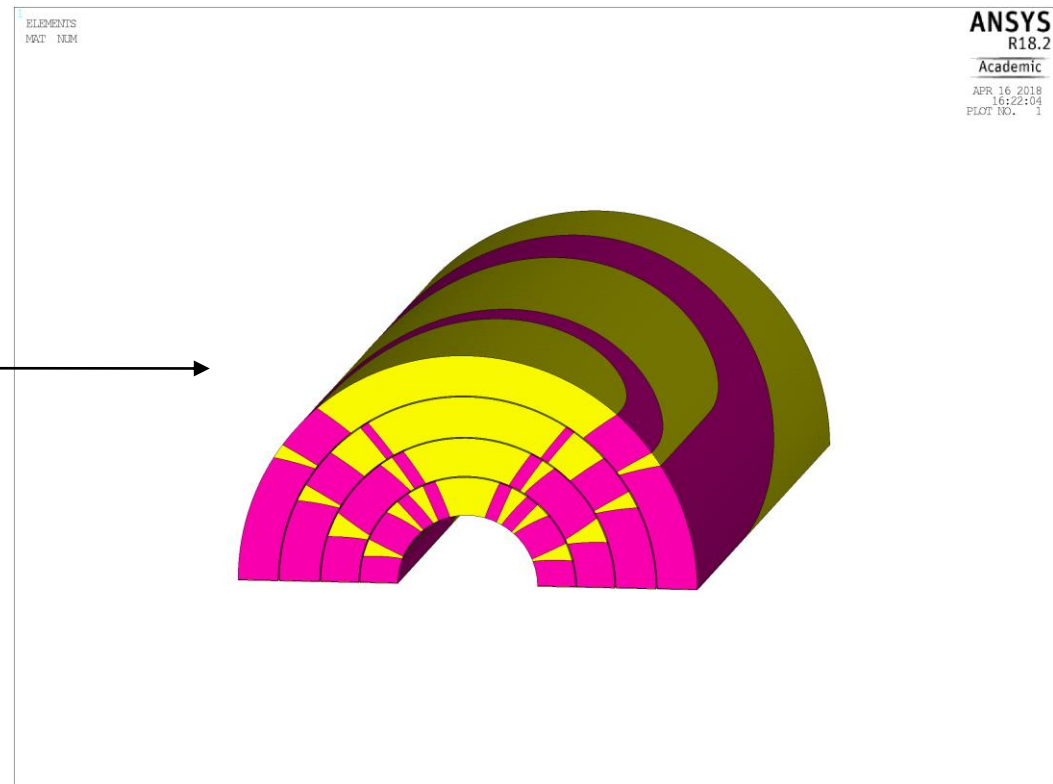
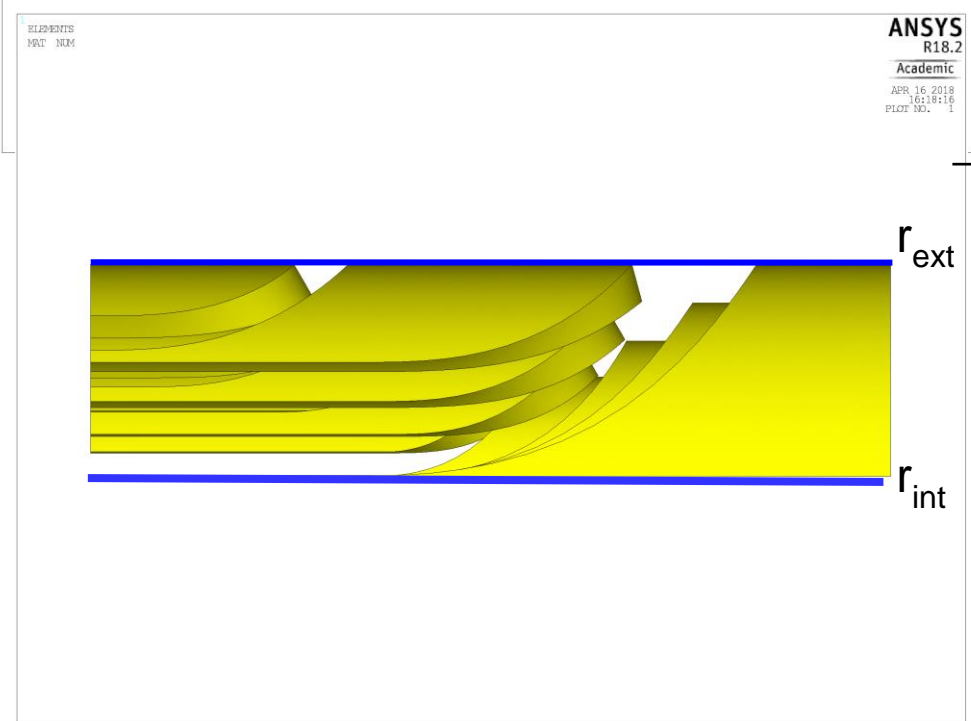
Open Points

- Conductor properties:
- Straight section:
 $E_r(@RT)=30 \text{ GPa}$, $E_\theta(@RT)=25 \text{ GPa}$, $E_z=??$
 $\alpha_r=3.08 \cdot 10^{-3}$, $\alpha_\theta=3.36 \cdot 10^{-3}$, $\alpha_z=??$
- Ends: homogeneous properties?
- Longitudinal pre-stress (end plates? tie rods?)

Conductors



- Build a cylinder with $r_{\min}=r_{\text{int}}$ & $r_{\max}=r_{\text{ext}}$
- Volumes overlap



Conductors

