

Machine Configuration Design

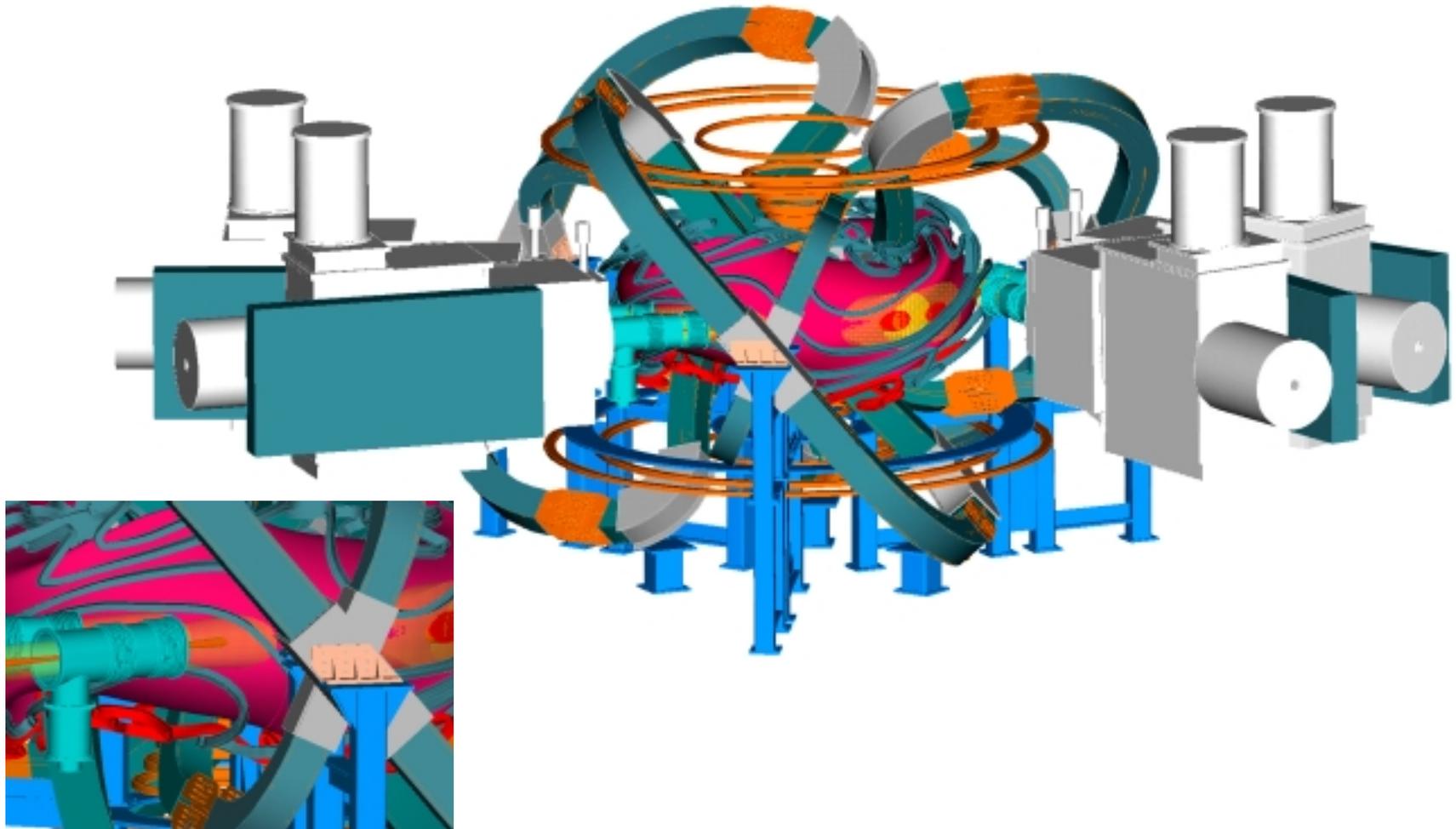
T. Brown (PPPL)

M. Cole (ORNL)

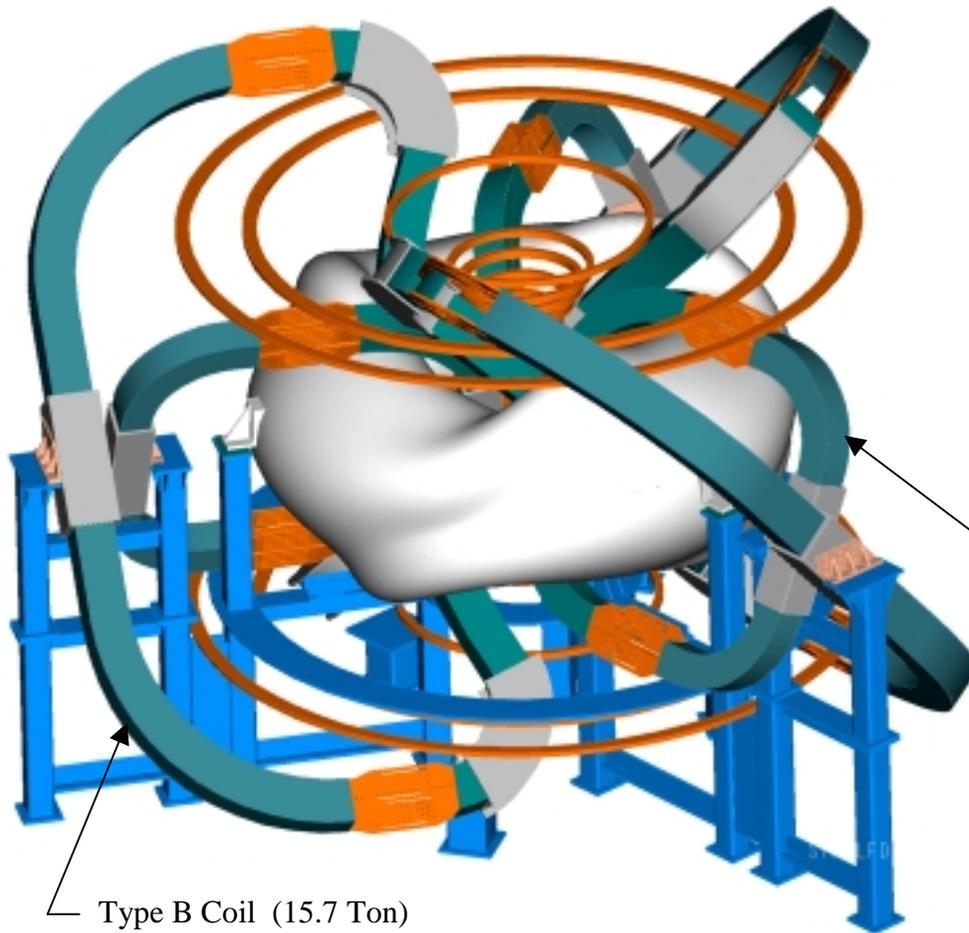
NCSX Project Meeting

May 16-17, 2000

Tilted TF Configuration



DESIGN DRIVERS FOR EXTERNAL COILS

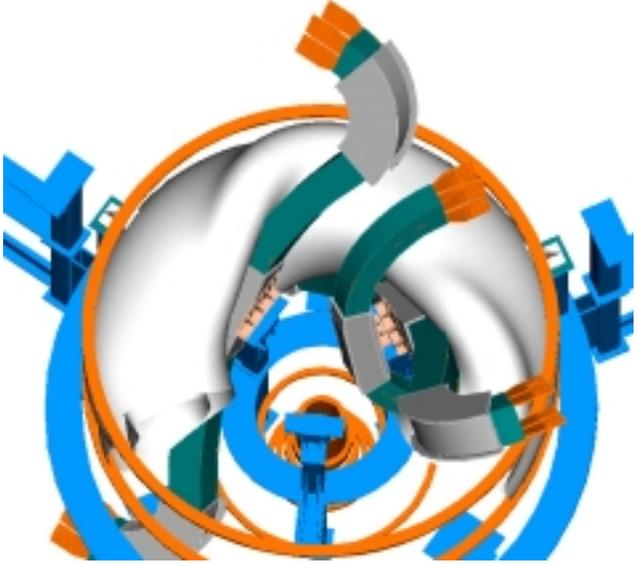
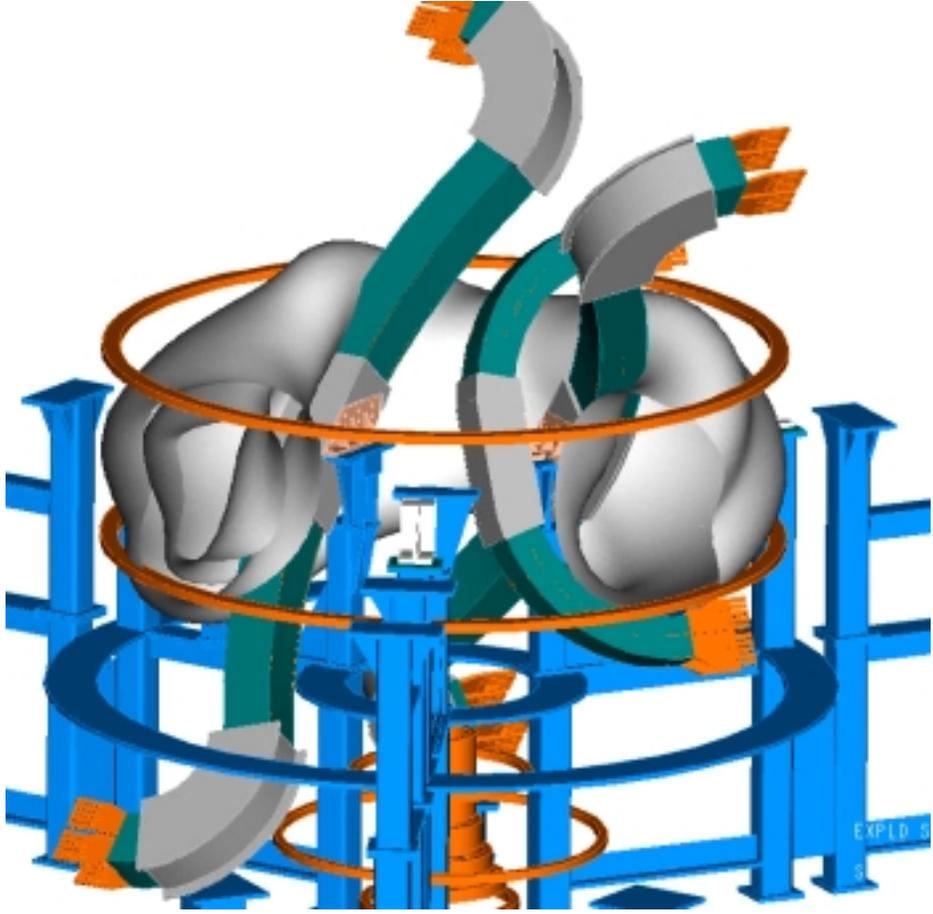


- Coil assembly
- Support structure for magnetic loads
- OH coil location
- Wound vs. jointed coils
- Max current per turn

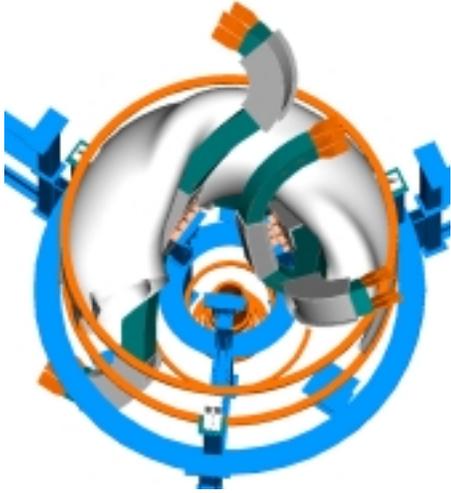
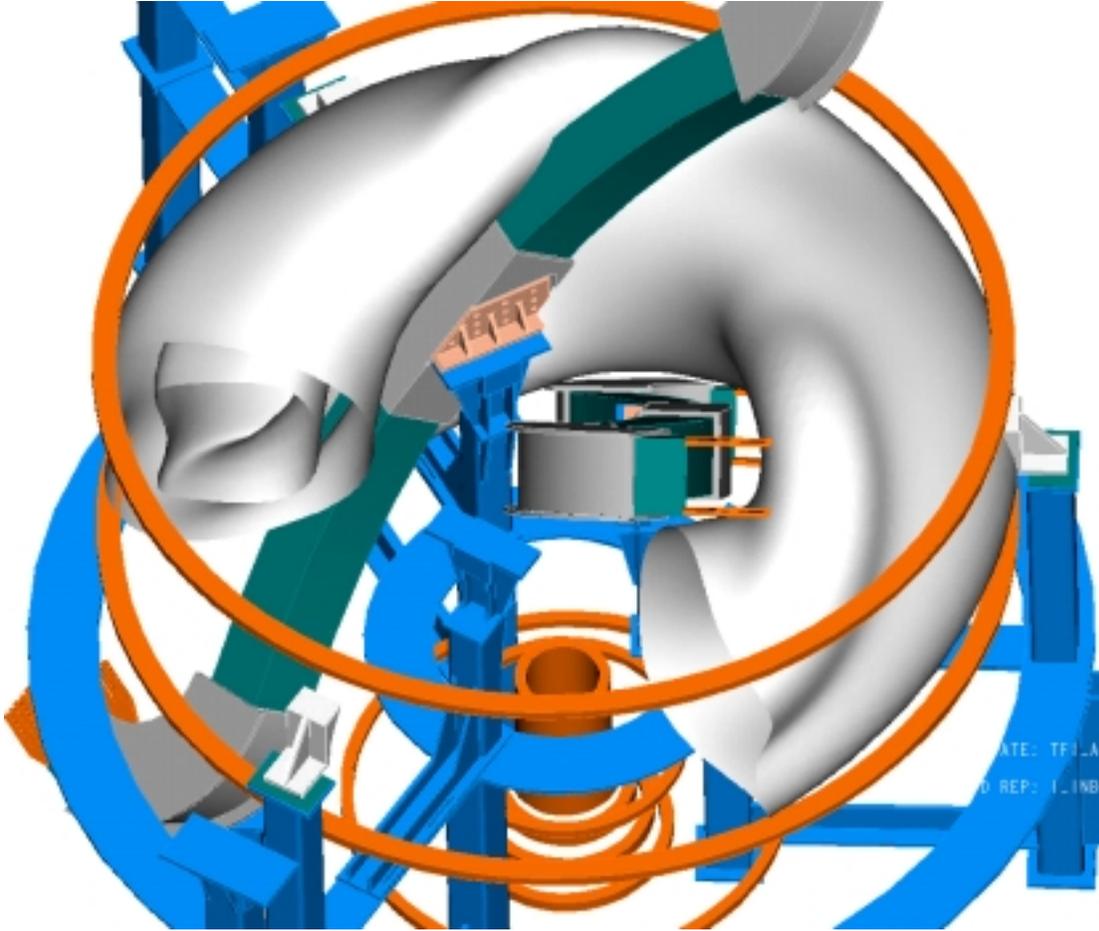
Type A Coil (5.4 Ton)

Type B Coil (15.7 Ton)

Inboard leg assembly

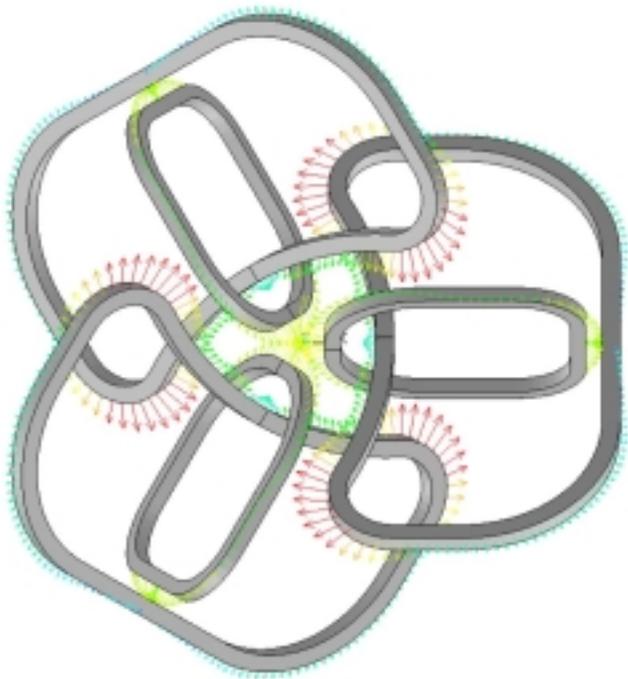


Inboard Leg Access

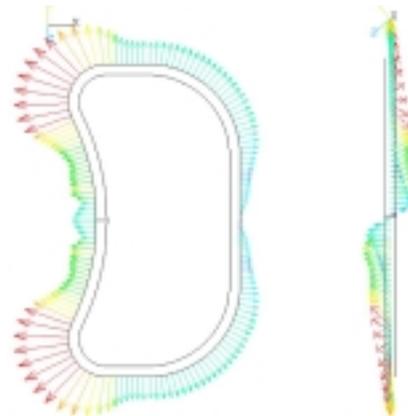
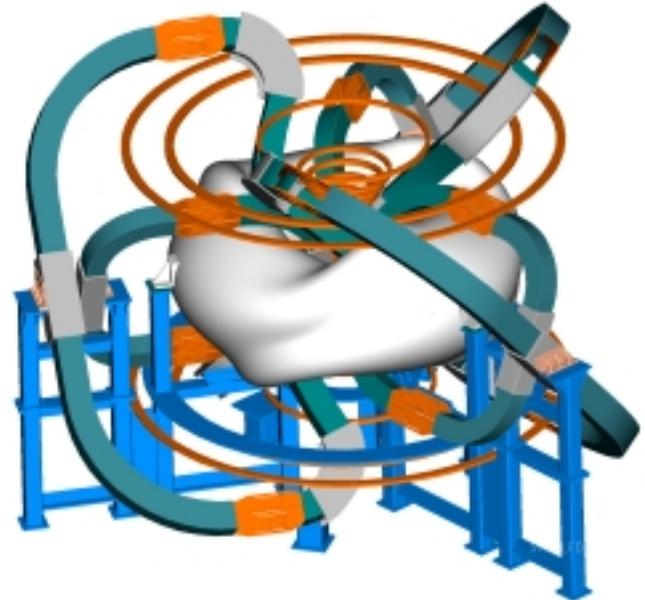


DATE: TFI...A
REP: I...INB

The Coil magnetic load support details need to be developed

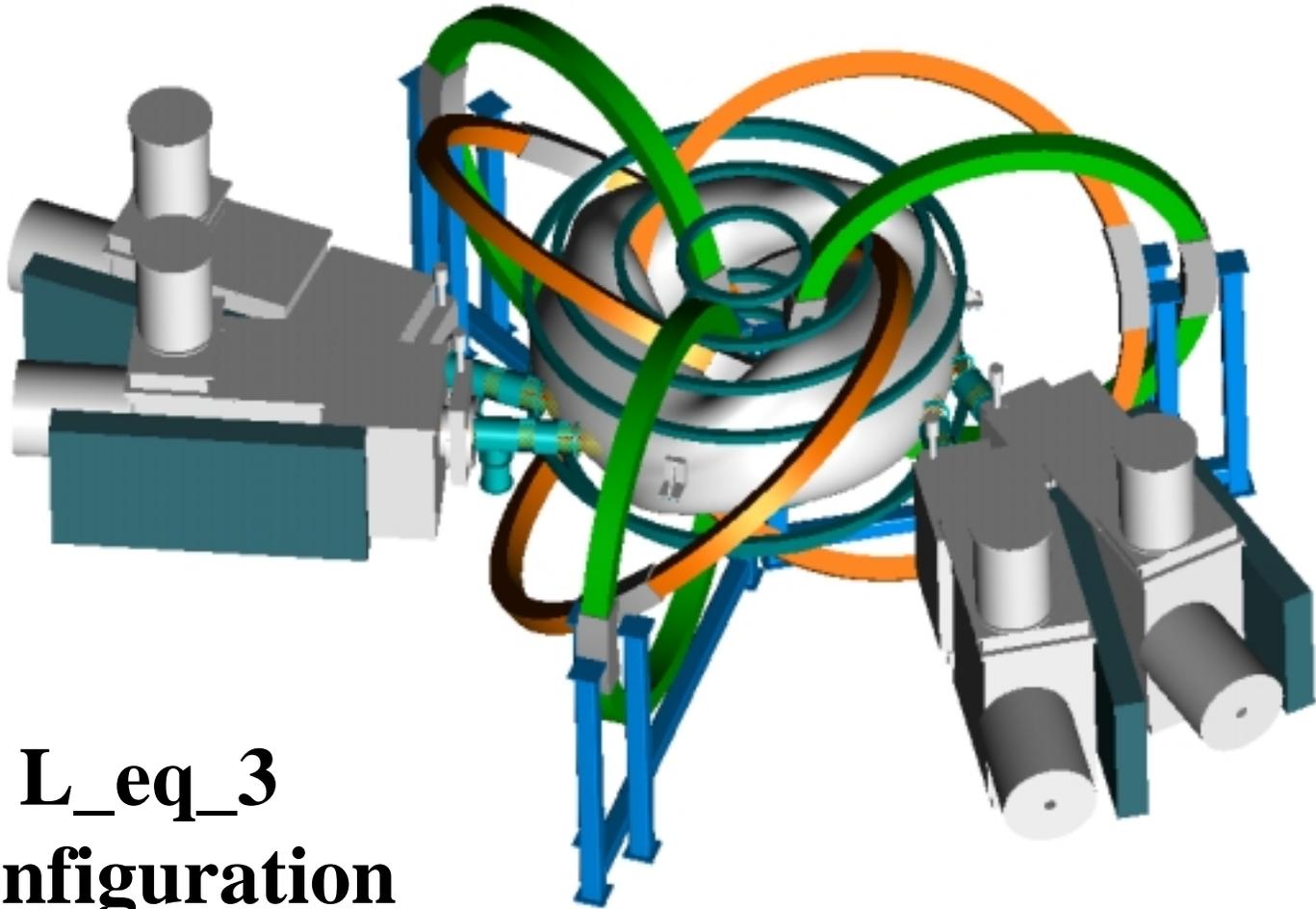


Magnetic forces on external coils



Magnet loads for Type A coil

**L_eq_3
Configuration**

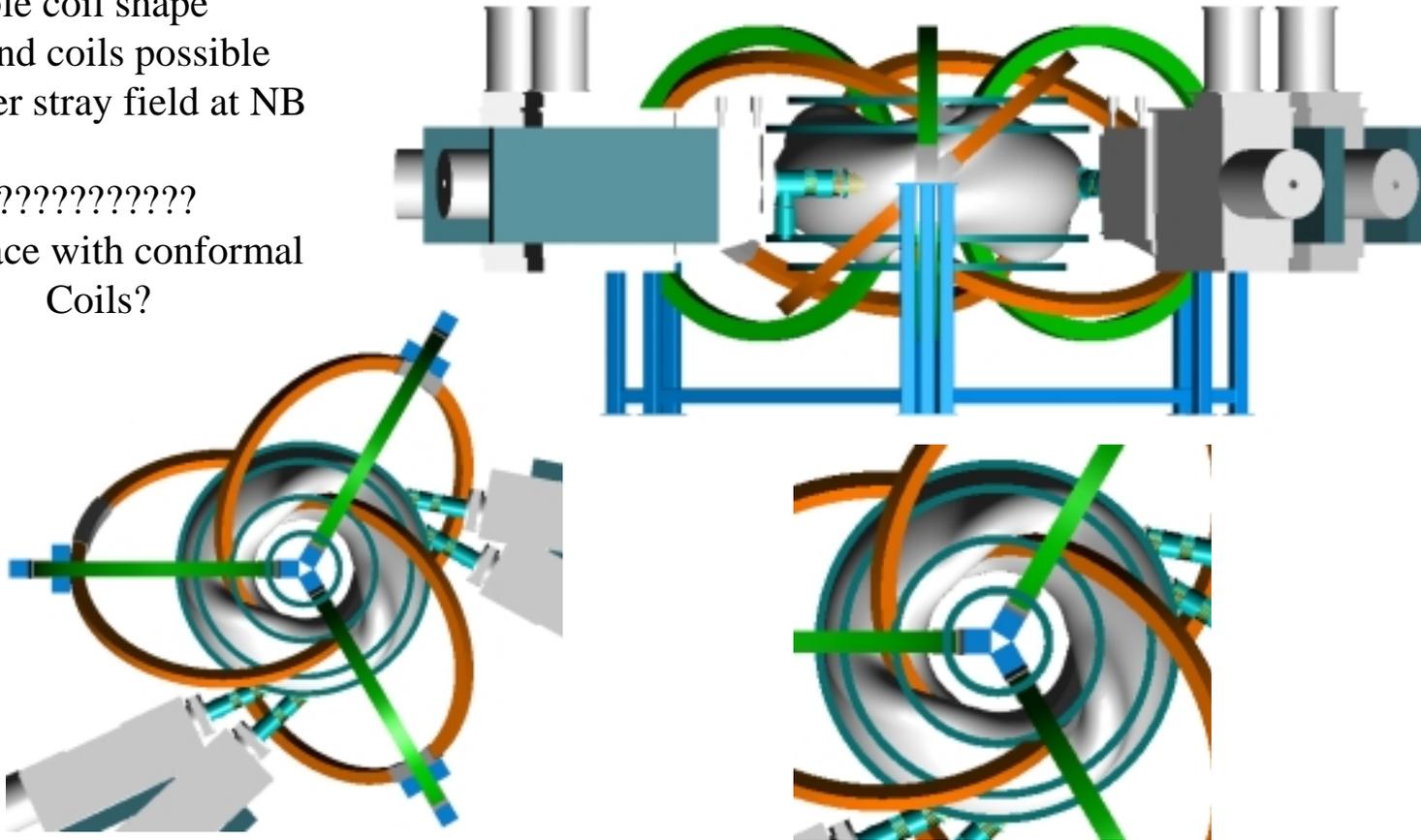


Advantages of L_eq_3

- Simple coil shape
- Wound coils possible
- Lower stray field at NB

??????????????

Interface with conformal
Coils?



Concluding Remarks

Further work is needed to develop the support structures and integrate the conformal coil features,

However

A configuration with conformal coils and background coils appears feasible