WELCOME

ERROR MAGNETIC FIELD WORKSHOP

SECOND POST-APS WORKSHOP

Friday, October 28, 2005
Denver, Colorado

DIII-D NATIONAL FUSION FACILITY

IMPORTANCE OF NON-AXISYMMETRIC FIELDS IN near AXISYMMETRIC SYSTEMS

- Locked modes
- Resistive wall modes -- RFA
- Rotational drag -- transport, stability
- Interpretation of axisymmetric equilibrium
- Control of the plasma boundary, ELM control

FROM THE LAST WORKSHOP: what I learned

- **For error field compensation: design the coil system to oppose the unstable eigenfunction**
- **The components of the error field that are important -- those that are resonant.**
  - Ignore non-resonant components?
- **Low m components are of most concern**
  m = 2, m = 1,3

Some Observations

- **The impact of a given non-axisymmetric field on rotation, transport, & locked modes varies**
  - Example is n=3 for ELM control. --- N=1?
  - Speculation: error compensation optimized for locked modes and that which minimizes rotational drag are not the same
- **Apparently, non-resonant fields have a significant affect on rotation**
- **Scaling of locked modes not easily reproduced on separate devices**
  - Poloidal spectrum??
- **For RFA, the "plasma" response can be measured to ~ 1 gauss.**

Possible Product of the Meeting

- Key remaining issues?
- New analysis?
- New codes?
- New experiments?