Modular Integrated Reactor Analysis (MIRA)
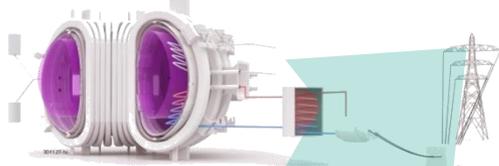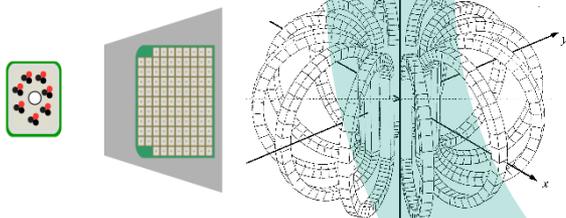

Reactor Integration into Plant System
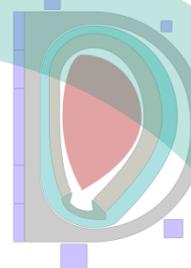
- Integral plant power balance
- Reactor pulse characterization
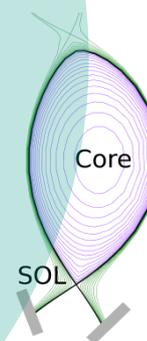
Reactor Architecture

- 2D geometric construction
- Blanket material composition
- Coil cable technology

MIRA Multiphysics Approach

Reactor Magnetics

- 3D magnetostatics
    - Magnetic field, force, energy
    - Toroidal field ripple
- Conductor design

Magnetic Equilbrium & Core/SOL Physics

- 2D free-boundary equilibrium
- Plasma power, particle, current integral balance

Reactor neutronics

- 2D n-γ plasma chamber
- 1D n-γ reactor
- TBR, nuclear heating
- Neutron shielding, dpa

Motivation & Goals ⟩⟩ **Approach & Application** ⟩⟩ Design improvements ⟩⟩ Conclusion & Outlook