

Suggested Approach to Research Thrusts for Theme 5

Theme Chairs

Proposal for Theme 5 thrusts

- Propose several thrusts that capture the opportunity and challenge associated with the integrated self-consistent solutions for toroidal alternate paths:
 1. Demonstrate and understand sustained high beta plasma confinement at reduced aspect ratio
 2. Optimize steady-state, disruption-free plasma confinement using 3D magnetic shaping, emphasizing quasi-symmetry principles
 3. Achieve high performance plasma confinement using minimal externally applied magnetic field
- The multi-faceted research plans for the “integrated scenario” for each of the alternates would be primary elements in these thrusts

Make sure multi-configuration research opportunities appear broadly in all Renew thrusts

- Within Theme 5:
 - While each configuration's integrated scenario has a principal home in one of these thrusts, the scientific opportunity and connections are in fact spread across all three thrusts (so we describe this cross-thrust context for each configuration and thrust)
- External to Theme 5:
 - Toroidal alternates enable science in thrusts arising from the other Themes. Theme 5 needs to identify these cross-theme connections, using the cross-configuration task force to organize this effort