ITER Fuelling Requirements and Scenario Development for H, He and DT through JINTRAC Integrated Modelling

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- First ever integrated 1.5D core + 2D edge simulations of
  - He plasmas (L-mode to ELMy H-mode predicted!)
  - Current ramp-up/down scenarios
- Pellet fuelling
  - Likely to be essential for the density rise in L-mode in H, DT
  - but should preferably be moderate during the L-H transition until ELMy H-mode is reached to avoid back transition.
  - Careful tuning of pellet size/frequency needed to avoid triggering MARFEs.
- H-L transition sufficiently slow for plasma control systems to keep the plasma from touching the vessel walls.
  - Ne seeding may require real-time control to keep divertor conditions within operational range.