„DEMO / First of it‘s kind“ design

- **Integration/Extrapolation**
  - PMI driver for plasma solution?
  - Similar or different Plasma scenarios for solid and for liquid metal PFC solutions?
  - Mtigiating risk from ELMs/Disruptions
  - Divertor (condition/geometry) <-> SOL <-> Pedestal <-> Core (connection to session on core edge integration)
  - Magnetic equilibria <-> size <-> Toroidal field strength <-> Coils <-> Forces <-> System dynamics
  - Pumping <-> Buffering <-> mfp/divertor „size“ - Scale size!
  - How to reliably extrapolate operating regimes from existing device to „DEMO“?
  - Using system codes / gaps? <-> „verifying“ design points
  - Role of costs ? Make it work vs.(?) economically attractive

Search for „magic bullet“ for „DEMO“ (divertor) design

- *M. Wade*: Achieving higher confinement offers significant benefits in reducing power exhaust requirements and device size
  - *Aggressive R&D program in core-edge integration is needed to develop robust scenarios along this line*
- Capability of modelling small λ_q regimes with turbulence/transport codes in large systems <-> role/availability of reduced models; using system codes
- *N. Asakura*: Core radiation / confinement / SOL and divertor radiation / machine size / compact approach vs “giant” device
- *M. Siccinio*: Re-attachment / machine risk – „In DEMO, there can be no controlled fast plasma termination“
- *F. Militello* (no magic bullet): Alternative divertor concepts vs. ITER like divertor:
  - control is difficult for all ADC configurations; engineering challenging, physics appealing
  - For the SN the physics is challenging but the engineering is appealing;