



ROLE OF CORE RADIATION LOSSES FROM PLASMA AND ITS IMPACT ON ST REACTOR DESIGN PARAMETER CHOICES

- Scoping studies show a constraint arising from the core radiation
- Increasing the core radiation fraction shifts the $Q=1$ contour to higher (R,B)
- This results in unreasonably high auxiliary power requirements for compact ST reactors (of ~ 100 MW)
- For high power reactors, the power balance demands a high core-radiation fraction (> 0.5) for obtaining a reasonable Q
- Experiments to establish the feasibility of high but controlled core radiation are needed

