Confinement and Equilibrium with Internal Islands in a Configuration Scan with respect to Iota in W7-X

J. Geiger et al, EX/P6-4

- Confinement variation in configuration scan (rotational transform $\iota$)
- Best confinement with $5/5$-islands close to boundary
- Improved confinement accompanied with increasing MHD-activity around $5/5$-islands => Island Localized Modes (ILM)
- Divertor configurations (islands forming boundary) rather quiet

- MHD-equilibrium calculations using HINT-code for consistently accounting for internal islands
- Flattening of pressure distribution in islands
- Deformations of equilibrium current densities due to flat pressure regions of internal islands