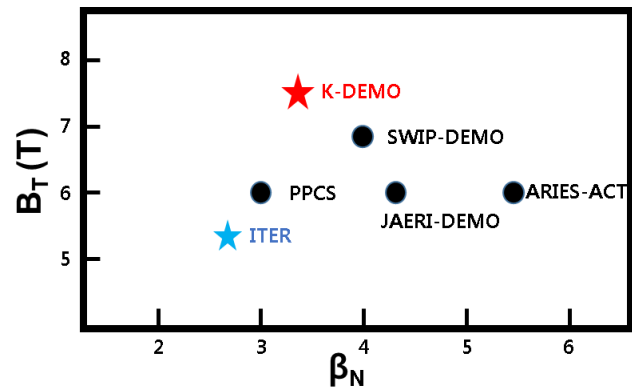


# Development of a Systematic, Self-consistent Algorithm for the K-DEMO Steady-state Operation Scenario FIP/3-3

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## K-DEMO Design Philosophy

- **Similar device size & aspect ratio with ITER.**
- **Extrapolation of ITER to High Magnetic Field.**

**Algorithm : self-consistent with confinement, current drive, stability.**

$$f(p,j) = \max(Q) \quad p : \text{pressure profile} \quad j : \text{current profile}$$

The systematic scenario optimization algorithm subject to maximize the fusion gain is newly established.

By utilizing ITER steady-state scenario modelling tools and boundary conditions, a fully non-inductive steady state scenario is derived with **2000 MW**, **Q 20.2** and  **$\beta_N$  2.84** for K-DEMO.

