Vertical Stability in QAS

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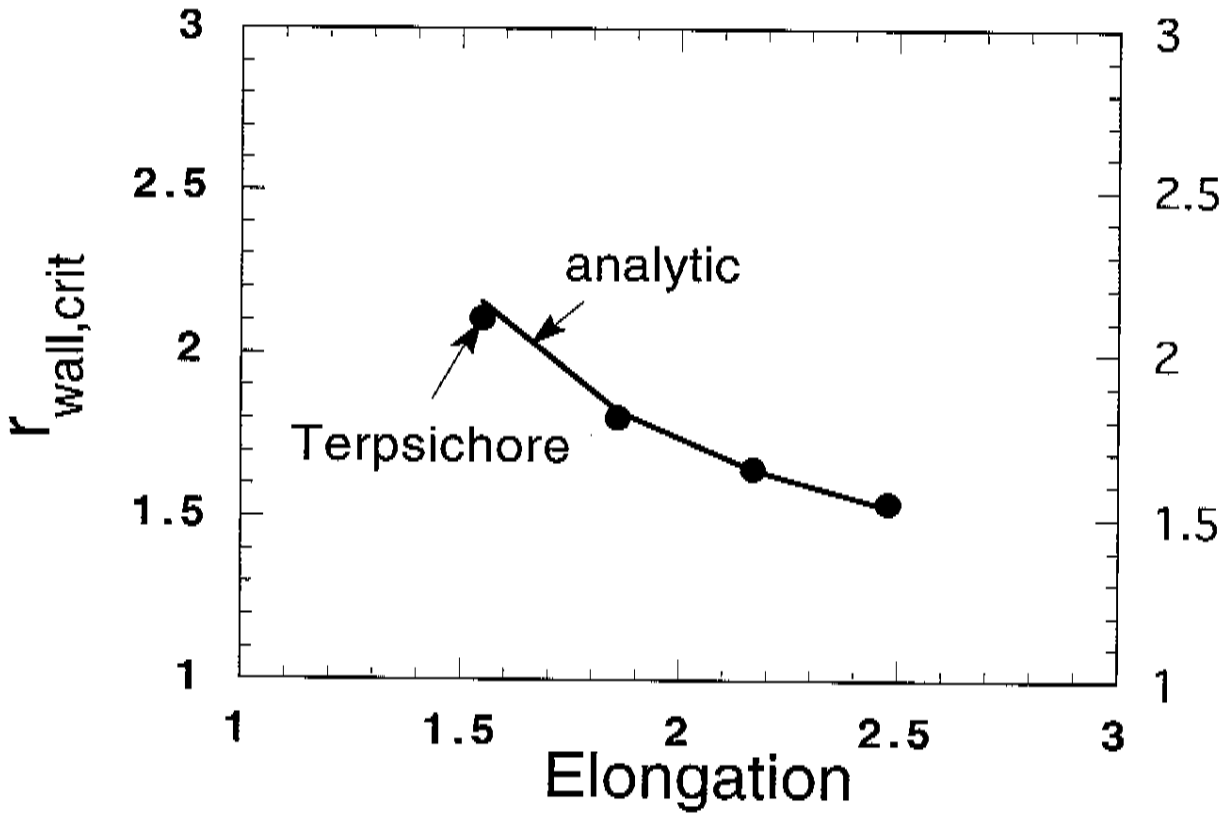
We have done initial calculations of vertical stability in QAS using Terpsichore. The configuration c82 is robustly stable to vertical mode.

(1) The Terpsichore's numerical results of n=0 stability agrees with analytic ones for a large aspect ratio tokamak with zero beta and constant current density;

(2) The QAS configurations are found to be stable to n=0 vertical mode. In particular, the c82 is robustly stable.

(3) The physical mechanisms for the 3D stabilization is under investigation.

critical wall position of vertical stability for a large aspect ratio tokamak



n=0 growth rate as a function of plasma boundary (varied from tokamak to c82)