M. Weiland et al.:
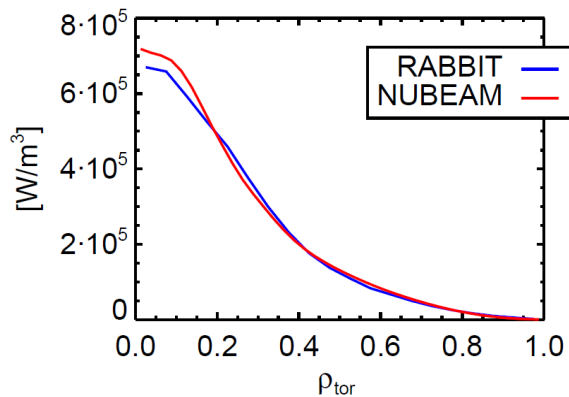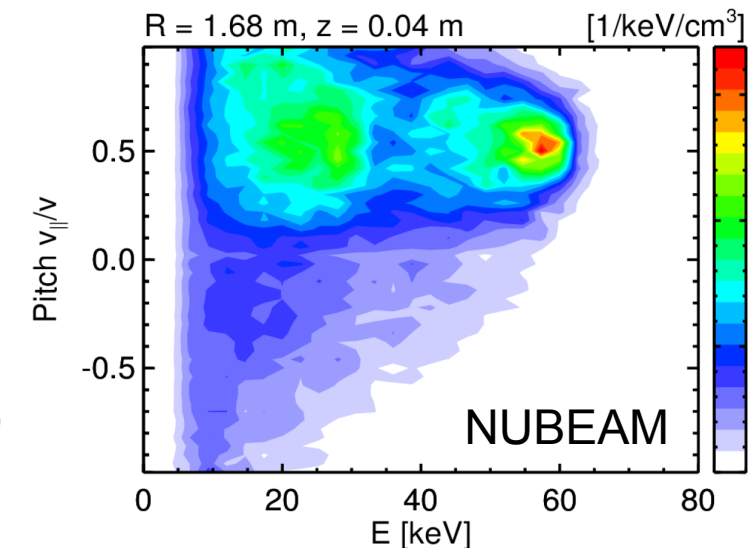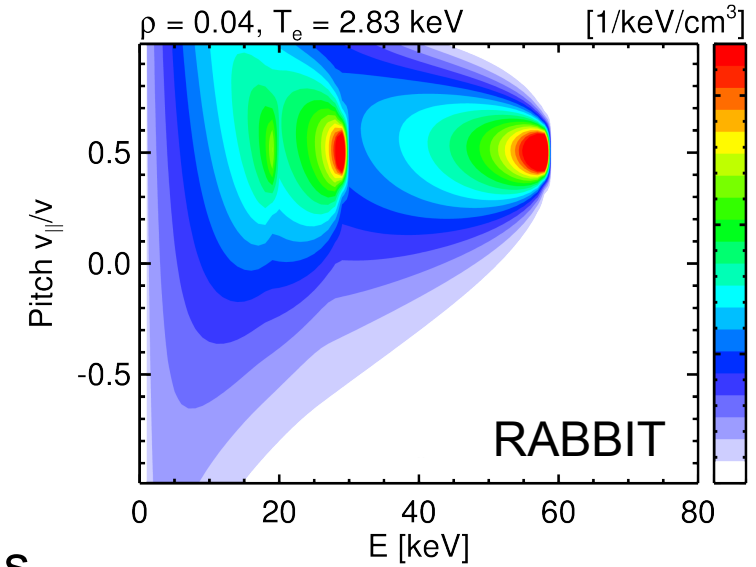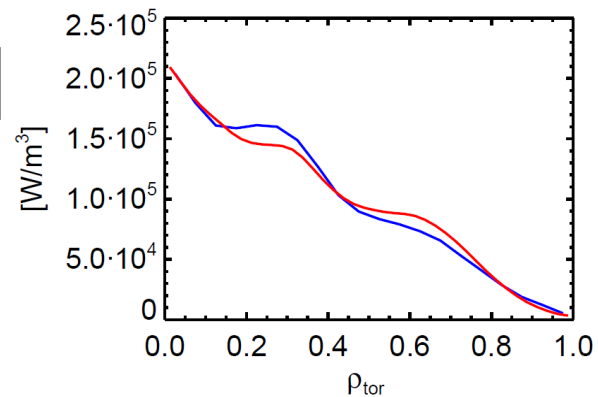# Real-time simulation of the NBI fast-ion distribution
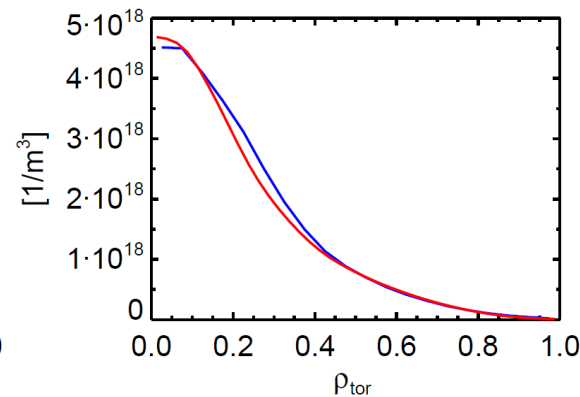
New RABBIT code:

- Simplified beam geometry, orbit average of beam deposition, analytic solution of Fokker-Planck equation

- ~20 ms per time-step, ~1000x faster than NUBEAM but still good agreement

- used as input for transport and equilibrium codes, or for direct comparison with experimental data (e.g. neutrons)

- e.g. in real-time, for fast intershot analysis or databases/parameter scans

(a) Heating to ions (b) Heating to electrons (c) Fast-ion density

IPP

contour plot including
colorbar axis label

ρ = 0.04, T_e = 2.83 keV   [1/keV/cm^3]

Pitch $v_\parallel/v$

E [keV]

RABBIT

R = 1.68 m, z = 0.04 m   [1/keV/cm^3]

Pitch $v_\parallel/v$

E [keV]

NUBEAM