Effect of the EC torque on slow plasma rotation under central ECH/ECCD for NTM onset

Fit *of evolution of toroidal velocity* under effect of central ECH/ECCD in L-mode, low density for AUG and TCV tokamaks

- *rotation fitted* by a semi-empirical momentum eq. with a torque S_{EC} associated to P_{EC} absorption ($P_{EC} > P_{oh}$) causing enhancement of residual turbulent Reynolds stress with a source near the center and in some cases near the edge
- *sources* modeled with Gaussian shape proportional to the central peak of $-\partial_r \nabla p_e$

Fit *of AUG rotation prfls (2 sources)*   ***Fit*** *of TCV rotation prfls (1 source)*

(experimental red lines, calculated green lines)

shape of prfl at NTM (4/3) time onset

↓

no change of prfl shape

central source   off-axis source
S_{EC} in co-I_p direction (> 0)

shape of prfl at NTM (2/1) time onset

↓

change of concavity of profile

one source
S_{EC} in co-I_p direction (< 0)