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**Study of intrinsic toroidal rotation in TCV discharges with microturbulence simulations** ALBERTO MARIANI, GABRIELE MERLO, STEPHAN BRUNNER, ANTOINE MERLE, OLIVIER SAUTER, Centre de Recherches en Physique des Plasmas, EPFL, 1015 Lausanne, Switzerland, FRANK JENKO, DANIEL TOLD, UCLA Physics & Astronomy, 475 Portola Plaza, Los Angeles, USA — Plasma rotation and associated velocity shear are known to play an important role in the formation of transport barriers. In many current tokamaks the main source of toroidal rotation is the Neutral Beam Injection (NBI). However, in certain machines with no NBI, such as TCV, plasma rotation is still observed. This so-called intrinsic rotation is of much interest in view of ITER, given the relatively limited penetration depth of NBI beams in this device. Remarkable observations have been made on TCV, as reported in [A. Bortolon et al. 2006 Phys Rev. Lett. 97], exhibiting in particular a rotation inversion phenomenon occurring in conjunction with a relatively small change in the plasma density. A possible explanation for this behaviour has been suggested in form of a transition in the microturbulence with increasing collisionality (∼density) from a dominantly TEM regime to a dominantly ITG regime. We are currently starting to analyse the intrinsic rotation observations on TCV in the framework of gyrokinetic turbulent transport modeling, performing flux-tube simulations with the local version of the GENE code [F. Jenko et al. 2000 Phys. Plasmas 7] at different minor radius positions, characterising the turbulence and computing the associated toroidal momentum flux.

Christian Theiler
Centre de Recherches en Physique des Plasmas, EPFL,
1015 Lausanne, Switzerland

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