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Applications of the equilibrium code FLOW and its integration within the Integrated Tokamak Modelling initiative LUCA GUAZZOTTO, ROBERTO PACCAGNELLA, Consorzio RFX — Plasma rotation is ubiquitous in current day magnetic-confinement experiments. Toroidal rotation is routinely observed in modern tokamak experiments, either induced by means of neutral beams or appearing spontaneously. Equilibria in the presence of macroscopic plasma rotation can be considerably different from static equilibria, if the rotation becomes comparable to some plasma characteristic speed. The code FLOW has been successfully used in the past to study the effect of plasma rotation on the equilibrium of different magnetic confinement configurations. New post-processing capabilities have been included in FLOW, with particular focus on neoclassical calculations. In particular, both the Sauter "fit" and the NCLASS model have been implemented in FLOW. Our focus is on bootstrap current calculations. One important aim is to evaluate the effect of rotation on neoclassical tearing (NTMs) modes, which are driven by the bootstrap current. We also briefly report on the application of FLOW full capabilities to RFPs. Finally, an update is given on the status of the integration of FLOW in the European ITM (Integrated Tokamak Modeling) framework, which is a major European endeavor on the way to ITER.

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