

Abstract Submitted
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Enhanced confinement, magnetic topology and diffusion in RFX-mod for poloidal current drive DAVID TERRANOVA, ALESSANDRA CANTON, PAOLO INNOCENTE, RITA LORENZINI, PAOLO ZANCA, ALBERTO ALFIER, FEDERICA BONOMO, Consorzio RFX, Euratom-ENEA Association, Corso Stati Uniti, 4 35127 Padova, Italy — The oscillating poloidal current drive (OPCD) technique proved to be the best way for inducing enhanced confinement regimes in the RFX-mod reversed field pinch. New OPCD experiments were carried out with plasma currents up to 1.4 MA with the virtual shell system operated in the clean mode control scheme. A significant improvement in plasma performances has been obtained over a large section of the plasma volume (as shown by the electron temperature profiles) by inducing modifications in the radial profile of magnetic fluctuations. The enhanced regimes are studied also in terms of magnetic topology and diffusion by using a field line tracing code based on the radial profiles of tearing mode eigenfunctions reconstructed in toroidal geometry from external magnetic field measurements. Experiments were carried out also with the injection of pellets synchronized with the poloidal position of the OPCD-induced island. Pellet deposition and three dimensional trajectory are correlated with the magnetic field structure in these enhanced regimes.

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