

Abstract Submitted
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Overview of the recent results of RFX-mod M. SPOLAORE, RFX-MOD TEAM¹ — The RFX-mod Reversed Field Pinch (RFP) experiment ($R=2\text{m}$ / $a=.459\text{ m}$) is exploring RFP physics at record high plasma currents and is equipped with a state-of-the-art MHD stability control system composed by 192 radial field coils, each independently driven, that completely cover the surface of the device. Thanks to a model-based algorithm and various feedback control schemes the system represents the most advanced tool for the magnetic boundary control providing a successful phase decoupling and amplitude reduction of tearing modes, as well as a full suppression of multiple Resistive Wall modes. Good quality and well reproducible discharges up to 1.6 MA plasma current lasting up to 0.5 s are now currently obtained. As the plasma current increases, a new spontaneous self-organization towards single axis helical states, with improved confinement properties and internal electron transport barriers, is observed. This is very promising for the future perspectives of the configuration. An overview of the results obtained during the 2008 campaign will be presented.

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