

Abstract Submitted
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Poloidal magnetic flux control experiments in Rotamak YURI PETROV, XIAOKANG YANG, TIAN-SEN HUANG, Prairie View A&M University — A new set of equilibrium coils has been installed in cylindrical chamber rotamak to allow for an active control of poloidal magnetic flux in 40-ms plasma discharges. The coils are powered by programmable current source with 1-3 ms response time. The coils allow controlling both the shape of the plasma and the boundary flux magnitude. Without the current in the coils, the boundary flux drops from vacuum value of 0.30 mWb to 0.05-0.10 mWb after the plasma current is generated. If the current is applied to the coils, the boundary flux can be maintained within 0.22-0.26 mWb range, thus keeping the separatrix away from chamber walls during plasma shot. The new system also includes passive flux conserving rings that help to eliminate fast variations of the boundary flux.

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