

Abstract Submitted  
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**Analysis of the active equilibrium control experiments in Rotamak** YURI PETROV, XIAOKANG YANG, TIAN-SEN HUANG, Prairie View A&M University — A model is presented that describes the change of plasma shape, plasma current and pressure under the effect of active equilibrium coils in Rotamak. In recent experiments, energizing the active coils with total current 1 kA resulted in plasma current increase from 2 to 4-5 kA. The peak plasma pressure was changing from 3-4 Pa to 5-6 Pa. The elongation of plasma was changing from 1 to 2, but the plasma volume was increasing by only 50% because of reduction in separatrix radius. We show that all these changes can be described by a model based on Solov'ev equilibrium and global power balance, with one input parameter: the value of magnetic field at the boundary.

Yuri Petrov  
Prairie View A&M University

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