

Abstract Submitted
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Tilted Planar Interlinked Coils as a Means of Generating Rotational Transform – Modelling and Experiment.¹ SHAH FAISAL MAZHAR, Columbia Univ, FRANCESCO VOLPE, RUBEN DIAZ-PACHECO, KENNETH HAMMOND, BEN ISRAELI, JESSICA LI, JUSTIN MANN, VERONICA MULILA, TOMMY POLANCO, ALBERT TAI, JACOB AUSTIN, Columbia University — CIRCUS [1] is a toroidal device for the magnetic confinement of plasmas. It is constructively similar to a tokamak, but has no solenoid, nor other means to generate plasma current. Yet, it is predicted to generate the helical field necessary for confinement by simply tilting its 6 planar coils. In this last regard it is more similar to a torsatron or stellarator, except that its coils are simpler, planar, and, in fact, circular. Experiments are under preparation, in which an electron beam will be used to visualize the magnetic topology and compare it with calculations. This is made possible by an electron gun movable in three dimensions. An ongoing upgrade consists in epoxying the in-vessel coils for better vacuum. We will also present predictions for devices featuring more coils, resulting in more axisymmetric plasmas. [1] A. W. Clark et al., Fusion Eng. Des. 89, 2014.

¹Tilted Planar Interlinked Coils as a Means of Generating Rotational Transform Modelling and Experiment

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