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Simulation, Analysis, and Design of the Princeton Adaptable Stellarator for Education and Outreach (PASEO) JARED CARLSON, ARTURO DOMINGUEZ, Princeton Plasma Physics Laboratory, N/A COLLABORATION — The PPPL Science Education Department, in collaboration with IPP, is currently developing a versatile small scale Stellarator for education and outreach purposes. The Princeton Adaptable Stellarator for Education and Outreach (PASEO) will provide visual demonstrations of Stellarator physics and serve as a lab platform for undergraduate and graduate students. Based off the Columbia Non-Neutral Torus (CNT) (1), and mini-CNTs (2), PASEO will create pure electron plasmas to study magnetic surfaces. PASEO uses similar geometries to these, but has an adjustable coil configuration to increase its versatility and conform to a highly visible vacuum chamber geometry. To simulate the magnetic surfaces in these new configurations, a MATALB code utilizing the Biot Savart law and a Fourth Order Runge–Kutta method was developed, leading to new optimal current ratios. The design for PASEO and its predicted plasma confinement are presented. (1) T.S. Pedersen, et. al, *Fusion Science and Technology* Vol. 46 July 2004 (2) C. Dugan, el. al, *American Physical Society; 48th Annual Meeting of the Division of Plasma Physics*, October 30-November 3, 2006

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