## Abstract Submitted for the DPP16 Meeting of The American Physical Society

STELLTRANS: A Transport Analysis Suite for Stellarators JOSEPH MITTELSTAEDT, University of Chicago, SAMUEL LAZERSON, NOVIMIR PABLANT, Princeton Plasma Physics Laboratory, GAVIN WEIR, Max-Plank-Institut fur Plasmaphysik, W7-X TEAM — The stellarator transport code STELLTRANS allows us to better analyze the power balance in W7-X. Although profiles of temperature and density are measured experimentally, geometrical factors are needed in conjunction with these measurements to properly analyze heat flux densities in stellarators. The STELLTRANS code interfaces with VMEC to find an equilibrium flux surface configuration and with TRAVIS to determine the RF heating and current drive in the plasma. Stationary transport equations are then considered which are solved using a boundary value differential equation solver. The equations and quantities considered are averaged over flux surfaces to reduce the system to an essentially one dimensional problem. We have applied this code to data from W-7X and were able to calculate the heat flux coefficients. We will also present extensions of the code to a predictive capacity which would utilize DKES to find neoclassical transport coefficients to update the temperature and density profiles.

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Date submitted: 14 Jul 2016 Electronic form version 1.4