

Abstract Submitted  
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**Modeling of High-Power Fundamental O-mode ECRH Plasmas in the HSX Stellarator**<sup>1</sup> J.W. RADDER, K.M. LIKIN, J.N. TALMADGE, D.T. ANDERSON, G. WEIR, HSX Plasma Lab, University of Wisconsin, Madison, S. MURAKAMI, Department of Nuclear Engineering, Kyoto University, Japan — Hard x-ray and ECE measurements provide evidence of suprathermal electron populations in the HSX stellarator for low density, 100 kW fundamental O-mode ECRH. A five-dimensional Fokker-Planck code, GNET, is used to calculate the deviation from a Maxwellian background distribution via a Monte Carlo technique. Calculated electron distribution functions are presented for low line average density, high-temperature plasmas ( $n_e \approx 2 \times 10^{18} \text{ m}^{-3}$ ,  $T_e \approx 1.5 \text{ keV}$ ) with low collision frequencies in the heating region. Calculated X-ray bremsstrahlung emission spectra and electron cyclotron emission spectra will be presented for non-Maxwellian electron distribution functions obtained with GNET and compared to measured spectra.

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