

Abstract Submitted
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Status of the Hybrid Illinois Device for Research and Application (HIDRA) DANIEL ANDRUCZYK, PETER FIFLIS, JEAN PAUL ALLAIN, DAVIDE CURRELI, DAVID RUZIC, University of Illinois, HIDRA TEAM — HIDRA is currently being assembled at CPMI at the University of Illinois [1]. It's a 5 period, medium sized classical stellarator using a $l=2$, $m=5$ configuration with $R=0.72$ m, $r=0.19$ m. Initial operation will have 26 kW of magnetron power and with OXB heating is expected to reach densities of $n_e=1 \times 10^{18} \text{ m}^{-3}$ and temperatures $T_e=20$ eV. The focus of HIDRA will be PMI research and PFC development. In fact HIDRA will be the first toroidal device dedicated to the development of new PMI experiments in fusion environments. The expertise of CPMI with in-situ diagnostics, such as MAPP, will open up new opportunities for innovative material testing and play a leading role in the development of future PFC solutions, e.g. innovative liquid metal divertor designs such as LiMIT. HIDRA will also play an important role in helping to validate computational modeling of edge plasmas and plasma surface interactions. Currently HIDRA is still being assembled with first vacuum expected in the summer 2015 and the first plasma to be in Fall 2015. This paper will present some of the initial measurements of HIDRA as it comes on line, discuss, challenges encountered and talk about future plans for research on HIDRA at UIUC.

[1] D. Andruczyk, et al., 2015 Fusion Sci. Technol., (accepted).

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