

Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

Latest results and developments from the Hybrid Illinois Device for Research and Applications RABEL RIZKALLAH, DANIEL ANDRUCZYK, ZACHARY JON JECKELL, ANDREW JOHN SHONE, DANIEL SCOTT JOHNSON, JEAN PAUL ALLAIN, DAVIDE CURRELI, DAVID N RUZIC, Univ of Illinois - Urbana, THE HIDRA TEAM — The Hybrid Illinois Device for Research and Applications (HIDRA) is a five-period, $l = 2$, $m = 5$, toroidal fusion device operated at the University of Illinois at Urbana-Champaign (UIUC). It has a major radius $R_0 = 0.72$ m and minor radius $a = 0.19$ m. Initial heating is achieved with 2.45 GHz electron cyclotron resonance heating (ECRH) at an on-axis magnetic field of $B_0 = 0.087$ T which can go as high as $B_0 = 0.5$ T. HIDRA will mainly be used as a classical stellarator, but can also run as a tokamak. This allows for both steady-state and transient regime operations. Experiments on HIDRA will primarily tackle the issue of plasma-material interactions (PMI) in fusion, and focus on developing innovative plasma facing component (PFC) technologies. Currently, research on flowing liquid lithium PFCs meant to be tested inside the machine in real-time operation, is being carried on. The first experiments run on HIDRA started in early 2016 in the low field region. Now, HIDRA is also capable of running in the high field zone, allowing for more interesting experiments and meaningful outcomes. Here, we present some of the initial results coming from the machine.

Rabel Rizkallah
Univ of Illinois - Urbana

Date submitted: 13 Jul 2017

Electronic form version 1.4