

New Emerging Arguments in Support of High Plasma Density and Magnetic Field Experiments

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Given the scaling of the reactivity (number of reactions/sec. cm³) for a Deuterium-Tritium burning plasma and the stability and density limit for axisymmetric confinement configurations it has become widely known that high field compact experiments are the most promising class of experiments in order to investigate plasmas close to ignition conditions. This kind of conclusion has been reached recently [1] also after analyzing the plasma parameters for which acceptable plasma wall interaction conditions can be produced.

Within the Ignitor Program a continuing effort is devoted to reassessing the machine design parameters with criteria that include optimizing the estimated plasma wall interaction conditions. In fact, this factor has not led to change the adopted machine parameters, and the main concern is directed to find improvements to the plasma chamber design in view of the increasing body of information on means to prevent the onset of large plasma current disruptions. *Supported in part by the U.S. DOE.

[1] R.J. Goldston, *Bull. Am. Phys. Soc.* PI3 4 (2017).

[2] B. Coppi *et al.*, *Nucl. Fus.* **55**, 053011 (2015).