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The High Field Compact Approach in Nuclear Fusion: Present and Foreseeable Developments vs. Damnatio Memoriae* P. SPILLANTINI, INFN, B. COPPI, MIT, G. GRASSO, Columbus — A confirmation of the fact that the most promising approach, in the effort to demonstrate experimentally that fusion burning D-T plasmas can reach near-ignition conditions [1], is that of high field compact (HFC) machines, has come from recent analyses [2] of confinement experiments conducted over the years. In fact, this approach can be adopted to begin investigations of D-D and D^{-3} He burning regimes. An important development that can be used in these experiments is that of high field super-conductor technology. This technology was pioneered with the adoption [3] and design of the largest (vertical field) coils of the Ignitor machine using MgB_2 super-conductors cooled to about 10°K. The use of hybrid magnets combining MqB_2 and high temperature super-conductors to reach the needed high fields for all the machine components has been proposed also with a specific configuration for envisioned future experiments [3]. A surprising occurrence, related to the ideas at the basis of the HFC machine approach has been the practice of the "damnatio memoriae" inflicted on their originators. *Sponsored in part by the U.S. D.O.E. [1] B. Coppi, 1721, 020003 (2016). [2] A.E. Costley, Nucl. Fus., 56, 066003 (2016). [3] B. Coppi, et al. Nucl. Fus., 55, 053011(2015).

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