

Abstract Submitted
for the DPP20 Meeting of
The American Physical Society

Progress Toward Fusion Energy Gain as Measured by the Fusion Triple Product: a Reference for Fusion Researchers and an Outreach Tool for Potential Investors SAM WURZEL, Fusion Energy Base, SCOTT HSU, DOE ARPA-E — First derived in 1955 by J. D. Lawson, the Lawson criterion remains today as the major guiding scientific metric in fusion research. The main purpose of this poster (and an associated paper in preparation) is to review and explain the Lawson criterion and related concepts such as the fusion triple product, fusion energy gain Q , and Q_{eng} , while also illustrating the progress made in fusion research over the past 65 years. Many plots and tables of achieved fuel densities, temperatures, energy confinement times, and experimentally inferred fusion triple products are presented for a broad range of historical and contemporary fusion experiments. Only experimentally measured or inferred values that have been published in the peer-reviewed literature are included. For extracting triple product parameters, we discuss methodologies that are necessarily specific to different fusion approaches (including magnetic, inertial, and magneto-inertial fusion). This poster and the associated paper in preparation are intended both as a reference for fusion researchers and as an educational/outreach tool for other interested stakeholders such as potential private fusion investors.

Sam Wurzel
Fusion Energy Base

Date submitted: 25 Jun 2020

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