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Fusion rates in adiabatically compressed ideal and non-ideal gases DAVID W. KRAFT, University of Bridgeport — We consider the mechanical compression of a dense plasma with reduced degrees of freedom such as may be effected by an electric discharge or by application of magnetic fields. The gas is assumed to undergo a reversible adiabatic compression and model calculations of the temperature increase are performed for one mole of deuterium initially at room temperature and pressure. Nuclear fusion rates resulting from primary fusion reactions and the corresponding energy releases are computed for both an ideal gas and a van der Waals gas.

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