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James R. Langenbrunner* (jr1@lanl.gov), MS F644, LANL, Los Alamos, NM 87545, and
Hanna Makaruk (hanna_m@lanl.gov), MS T080, LANL, Los Alamos, NM 87545. *Temperature dependence of nuclear fusion*. Preliminary report.

Nuclear deuterium fusion occurs as the second stage of the proton-proton chain reaction, supplying energy to Main Sequence stars. Deuterium-Tritium is also experimentally investigated at National Ignition Facility (US) and is going to be investigated at proposed High Power Laser Energy Research (HiPER, Europe) for a possibility of becoming an energy source on Earth. The rate of the fusion depends in a nonlinear way on the temperature. A mathematical model of this dependence is discussed. (Received January 13, 2017)