

Abstract Submitted
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Neutron spectroscopy of $D(d,n)^3He$ Z-pinch experiments¹ KAREL REZAC, FEE CTU in Prague, DANIEL KLIR, PAVEL KUBES, JOZEF KRAVARIK — The neutron time-of-flight (TOF) diagnostics of hot dense Z-pinch fusion plasma is the spectroscopy method with the best energy resolution. The diagnostic setup consists of several neutron TOF detectors placed in one line. The principle of the reconstruction of time-resolved neutron spectra when the duration of neutron production is not negligible will be described. The possibilities and limitations of this method: (i) reconstruction from mutually opposite directions of the neutron detection (ii) influence of the scattered neutrons and (iii) energy resolution will be also discussed. In addition to that, the procedure for determination of average kinetic energy of the reacting deuterons will be presented. Finally, the design of the appropriate neutron TOF diagnostics setup will be described.

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