

Abstract Submitted  
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**Multiple neutron peaks from  $D(d,n)^3\text{He}$  reactions in Z-pinches and plasma foci**<sup>1</sup> DANIEL KLIR, JAKUB CIKHARDT, JIRI KORTANEK, JOZEF KRAVARIK, PAVEL KUBES, EKATERINA LITSEVA, KAREL REZAC, FEE CTU in Prague, PF-1000 TEAM, S-300 TEAM — Neutron production from  $D(d,n)^3\text{He}$  reactions has been studied in compressional Z-pinches, plasma foci and deuterium gas puffs since the 1950. Recently, neutron measurements have been carried out on the S-300 Z-pinch and the PF-1000 plasma focus at 2 MA current. When the experimental results from these generators were compared, some similarities were found. The characteristic feature was the neutron emission which consisted of multiple peaks. The main neutron emission is usually explained by the disruptive development of necks of  $m=0$  instabilities. On the contrary to that, neutron diagnostics and laser interferometry at the PF-1000 showed that up to  $10^{11}$  neutrons were produced at the stagnation, i.e. during the so-called quiescent phase of the discharge. The plasma dynamics observed during this phase will be described and the results from neutron TOF diagnostics will be presented.

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