

# Considerations About Deformed Space-Time Neutron Spectra

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**Abstract.** Within the general framework of studies and experiences regarding the neutrons produced under conditions of Deformed Space-Time (DST), due to the violation of the local Lorentz Invariance (LLI), some neutron energy spectra are investigated. DST-neutrons are produced by a mechanical process in which AISI 304 steel bars undergo a sonication using ultrasounds with 20 kHz and 330 W. The energy spectrum of the DST-neutrons have been investigated both at low (less than 0.4 MeV) and at high (up to 4 MeV) energy by means of MICROSPEC2 Neutron Probe and also by means of a passive detector specifically designed for the detection of neutrons emitted in reactions related to deformation of the space-time. The particular features of these DST-neutrons spectra leads us to consider the hypothesis that DST-neutrons production is not uniform also in energy, in a similar way already seen in time asynchrony and spatial asymmetry.

*Keywords:* Piezonuclear neutron detection, Neutron measurements, Neutron energy, Deformed Space-Time, Local Lorentz Invariance.