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Diffraction of Neutrons on the Acoustic Superlattice

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In this work the effect of thermal neutrons focusing in a quartz single crystal under the influence of acoustic fields in Laue diffraction geometry has been theoretically discussed. It is shown, that by the variation of operating parameters of spatial acoustic fields induced in a quartz single crystal, it is possible to monochromatize the neutron beam, tenfold increase its intensity, focus and control the focusing location in space.

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