ACOUSTICS2008/805 Amplitude distribution of magnetoelastic waves propagating in a vortex field in a superconducting layer

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Magnetic field enters the type - II superconducting body along a discrete arrangement of magnetic vortex lines. In the dynamic case when the magnetic field vary in time, around each such a line a supercurrent flows. So, the vortices interact one to another with the help of the Lorentz force forming this way a new mechanical field of elastic properties. Moreover, those lines arrange themselves in a triangular or quadratic lattice. Such a set is observed if the intensity of the applied to the material magnetic field is close to its lower limiting value. The paper aims at investigating amplitude distributions of magnetoelastic waves propagating solely in the vortex field of the superconducting layer. Our attention have been focused on the applied magnetic field intensity influence on those amplitudes for various wave frequencies.