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**SH-wave propagation and localization anomalies in semi-infinite
1D magnetic phononic crystal**

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At the present, the composite magnetic materials with a superstructure (magnetic photonic crystals) are actively investigated in view of conditions of electromagnetic wave transmission. Some of these materials are acoustically continuous media and, then, can be considered as magnetic phononic crystals (MPC). However, the dynamic acoustic peculiarities of such structures have been disregarded. Theoretical investigation of SH-wave propagation in the gyrotropic and nongyrotropic semi-infinite one dimensional magnetic phononic crystals (1D MPC) is presented here. We have taken into account magnetoelastic interaction and the commensurability a wavelength and 1D MPC period. The transfer matrix method allowed us to determine the specific features of volume SH-wave localization and propagation near the rigid interface of 1D MPC and non-magnetic medium. In particular, the necessary conditions of existence and dispersion relations for three types of shear surface acoustic waves localized near the external surface of 1D MPC have been found. This type of elastic excitation are exists also for a case when elastic properties of MPC components are identical. The conditions of reflectionless transmission of volume SH-waves through a finite 1D MPC have been determined.