

SPIN WAVE RESONANCE PROFILES IN MAGNETIC MULTILAYERS

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A great number of studies have been performed on the properties of magnetic multilayers exchange coupled via metallic nonmagnetic spacer. Beside of the problem of interlayer exchange coupling, which has been investigated by means of various theoretical methods also, basic magnetic properties of multilayer systems have been examined both by experimentalists and theoretician. In particular the problem of elementary magnetic excitations in multilayers has been considered in many papers, where magnon dispersion relation or spin wave spectra have been obtained, however, little attention have been paid to the problem of the problem of magnon damping effects and its influence on the shape of spin wave resonance lines.

In presented work the relaxation equation has been used to determination spin wave profiles Fe and Co layers with Au and Cu spacers and substrate characterised by parameters corresponding to GaAs. As a result the dependence of resonance line-width on temperature and parameters characterizing the system has been obtained. The influence of thickness of constituent layers, interlayer exchange coupling parameter, surface and interface magnetic anisotropy constants on the obtained spectra has been discussed. The range of parameters where surface or interface anisotropy determines the resonance line-width has been found.

9.7 cm

13.4 cm

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