9.7 cm

TRANSIENT EFFECTS IN MAGNON RELAXATION

J.A. Morkowski

Institute of Molecular Physics, Polish Academy of Sciences, Poznań, Poland

Traditionally magnon relaxation was studied by means of the Boltzmann equation. This method provides correct description of kinetic processes in conditions not far from equilibrium. Recently experiments were done on fast recovery of ferromagnets to equilibrium after a magnetic disturbances in time scale in the range of picoseconds or shorter, see e.g. [1,2]. A study of transient effects in relaxation of magnons towards equilibrium after a short magnetic field pulse is thus relevant. Some results on short time evolution of the magnon system will be presented in the paper, with particular attention to the three magnon confluence processes for magnons, especially those from upper levels of the degenerate magnon spectrum in systems with magnetic dipolar interactions.

[1] E. Beaurepaire et al., Phys. Rev. Lett. **76**, 4250 (1996).
[2] M. Aeschlimann et al., Phys. Rev. Lett. **79**, 5158 (1997).

13.4 cm

Subject category :

6. Theory of Magnetism

Presentation mode :
poster

Corresponding author :
J.A. Morkowski

Address for correspondence :
Institute of Molecular Physics, Polish Academy of Sciences,
ul. M. Smoluchowskiego 17, 60-179 Poznań, Poland

Email address :
jmorkows@ifmpan.poznan.pl