

Role of the parameters of external fields acting on a spin system in harmonic-generation processes

Sadykov I.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Crossed dc and ac magnetic fields are applied to a paramagnet in a continuous regime in an investigation of the induction signal at the doubled and tripled pump frequencies. The experimental object is powdered diphenyl picryl hydrazyl (DPPH), and the pump frequency used is 11 MHz. It is shown that harmonic generation and the orientational dependences of the harmonics arise due to nonlinear variations of the magnitude and the "rocking" angle of the vector sum of the external fields and the precession frequency of the spin magnetization. Anomalies are observed in the Bloch-Siegert effect. © 1997 American Institute of Physics.

<http://dx.doi.org/10.1134/1.567504>
