Determination of the quadrupole splitting in bulk *n*-GaAs by warm-up spectroscopy

© *V.M. Litvyak*[1], *R.V. Cherbunin*[1], *V.K. Kalevich*[1,2], *K.V. Kavokin*[1]

[1] Spin Optics Laboratory,
198504 St. Petersburg, Russia
[2] Ioffe Institute,
194021 St. Petersburg, Russia

E-mail: valiok.ok@gmail.com, r.cherbunin@gmail.com, kalevich@solid.ioffe.ru' kkavokin@gmail.com

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We found bulk *n*-GaAs layers grown by liquid phase epitaxy to be irregularly stressed. Deformation created by this stress causes a small but detectable quadrupole splitting of Zeeman nuclear energy levels. In our work we detected a very weak quadrupole splitting for ^{69}Ga and ^{75}As isotopes in bulk *n*-GaAs and obtained the value of the sample deformation. To this end, we used a new method that we call warm-up spectroscopy of nuclear spins in weak external magnetic fields.

Keywords: nuclear spin, absorption spectrum, quadrupole splitting, oscillating magnetic field, warm-up spectroscopy.

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