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Possibilities of Vector Magnetometer in Studies of Magnetic Macroscopic Quantum Tunneling (MQT) ALEXANDER BAZHAN, P.L.Kapitza Institute for Physical Problems, RAS, ul. Kosygina 2, 119334 Moscow, Russia — Magnetization and thermoremanent magnetization processes of samples of randomly oriented magnetic nano-particles with superparamagnetic properties and thermally activated relaxation in high temperatures are of interest in studies of magnetic MQT at low temperatures in nanoscale technologies. Thermoremanent magnetization processes are of interest as deviations from thermal relaxation regime are easily detected by studies of magnetic viscosity. Variation of magnetization with time at magnetic field cutting off after samples cooling are studied in experiments. Vector magnetometer presents possibility to study the decay of magnetic field dependencies and the decay of time dependencies in magnetic fields of perpendicular to magnetic field sample magnetic moment components after sample cooling and ninety-degrees rotation with respect to magnetic field. Comparison of time dependencies of magnetic moments components of samples of randomly oriented magnetic present information about the same physical parameters, including MQT, which determine relaxation processes of magnetic nano-particles.

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