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Investigations of Exchange and Magnetic Anisotropic Interactions of Magnetic Ions in Antiferromagnetic Materials ALEXANDER BAZHAN, P.L.Kapitza Institute for Physical Problems, RAS, ul. Kosygina 2, 119334 Moscow, Russia — Investigations of exchange and magnetic anisotropic interactions of magnetic ions, which determine antiferromagnetic orderings in materials, used in HTS, are of interest due to investigations of transformations of antiferromagnetic orderings, when additional two dimensional systems of correlated electrons, holes carriers are introduced. Discussions of states, which can appear before HTS, are of interest in such investigations. In experimental investigations of, determined by exchange and magnetic anisotropic interactions, magnetic phase transitions, investigations of separate components of samples magnetic moments, which determine orientations of samples magnetic moments, are useful. Investigations of, determined by orientations of ordered magnetic moments, magnetic phase transitions in antiferromagnetic materials and states with weak ferromagnetism at selected orientations of ordered magnetic moments in antiferromagnetic materials using vector vibrating sample magnetometer with horizontal magnetic field, up to 90kOe, and liquid helium temperatures, which can investigate separately magnetic field dependencies of three perpendicular components of samples magnetic moments, demonstrate possibilities of such magnetometers in investigations of exchange and magnetic anisotropic interactions of magnetic ions.

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