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Exchange and Magnetic Anisotropic Interactions ALEXANDER BAZHAN, P.L.Kapitza Institute for Physical Problems, RAS, ul. Kosygina 2, 119334 Moscow, Russia — Studies of exchange and magnetic anisotropic interactions, which determine antiferromagnetic (AF) orderings of magnetic ions particularly in used in HTS tetragonal Mott insulators, by studies of magnetic field behaviour of separate components of sample magnetic moments are discussed. Antiferromagnetic orderings are described by phenomenological theory of magnetic symmetry with representations of interacting magnetic moments by antiferromagnetic and magnetic vectors. Magnetic field behaviour of AF orderings in such representations are discussed with introduction of model which connect transformations of absolute values of AF vectors on magnetic field with transformations of magnetic susceptibilities along AF vectors, expressions of which are presented in equations of magnetic states. Advantages of vector magnetometer are discussed in studies of interactions, which determine AF orderings and weak ferromagnetism in AF materials and in studies of AF orderings of Cu moments in Mott insulators, which are of interest in studies of transformations of AF orderings, when correlated electron-hole carriers are introduced.

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