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Nota di contenuto	What is frustrated magnetism and why should you care? -- An introduction to field theory in magnetic systems: the Néel antiferromagnet -- Angle-resolved NMR: a theory of the 1/T1 relaxation rate in magnetic systems -- Theory of the NMR relaxation rate in magnetic Fe pnictides -- Field theoretical description of quantum spin-nematic order -- How to recognise the quantum spin-nematic state.
Sommario/riassunto	One of the best ways to "lift the lid" on what is happening inside a given material is to study it using nuclear magnetic resonance (NMR). Of particular interest are NMR 1/T1 relaxation rates, which measure how fast energy stored in magnetic nuclei is transferred to surrounding electrons. This thesis develops a detailed, quantitative theory of NMR 1/T1 relaxation rates, and shows for the first time how they could be used to measure the speed at which energy travels in a wide range of magnetic materials. This theory is used to make predictions for" Quantum Spin Nematics", an exotic form of quantum order analogous to a liquid crystal. In order to do so, it is first necessary to unravel how spin nematics transport energy. This thesis proposes a new way to do this, based on the description of quarks in high-energy physics. Experiments to test the ideas presented are now underway in laboratories across the world.