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**Theory of the Bose-glass states in Br-doped Nickel-Tetrakis Thiourea (DTN)** RONG YU, Rice University, STEPHAN HAAS, University of Southern California, TOMMASO ROSCILDE, Ecole Normale Superieure de Lyon - France — We present extensive Quantum Monte Carlo calculations on bond-disordered coupled spin chains with strong single-ion anisotropy, modeling the behavior of Br-doped Nickel-Tetrakis Thiourea (DTN). Our model quantitatively describes the phase diagram of the experimental compound - in particular the low-temperature magnetization curve and the critical temperature for magnetic Bose-Einstein condensation as a function of the field. Hence it provides fundamental insight into the nature of the Bose-glass phases appearing at low temperature close to the two critical fields for condensation. Br-doped bonds act as nucleation centers of magnetic quasiparticles in the low-field Bose glass, while at high fields the Br-doped bonds represent the localization centers of magnetic quasiholes. The quantitative understanding of Br-doped DTN opens the way to a detailed investigation of Bose-glass physics in quantum magnets.

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