Extinction of phase transition and spin transport on site diluted quantum two-dimensional antiferromagnet in Bose-Einstein condensation[1] LEONARDO DOS SANTOS LIMA, Departamento de Fsica e Matemtica, Centro Federal de Educao Tecnolgica de Minas Gerais — We study the two-dimensional Heisenberg antiferromagnetic model with ion single anisotropy in the square lattice in the presence of nonmagnetic impurities at $T = 0$ using the SU(3) Schwinger boson theory. In particular, we discuss the influence of site disorder on the quantum phase transition of this model at D_c that separates the Néel phase, $D < D_c$, which is gapless, from the disordered phase, gapped phase, $D > D_c$. We find that the long-range order in $D < D_c$ for the model without impurities is destroyed for a concentration of nonmagnetic impurities $x_c \approx 0.15$. We have studied also the spin transport of this model. In particular we discuss the influence of site disorder on the spin conductivity of the model and the influence of quantum phase transition on it. We find a large influence of the site dilution at the ac conductivity or continuum conductivity, and on the spin stiffness D_S that generates information about the dc conductivity. The point of extinction of $D_c with x does not generate an influence on the spin conductivity.$

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