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Tuning the entanglement for a two-dimensional magnetic system with anisotropic coupling and impurities QING XU, SABRE KAIS, Purdue University — We study a set of localized spins coupled through exchange interaction and subject to an external magnetic field. For such a class of two-dimensional magnetic systems, we introduce two impurities, and treat as the source, while the rest as the environment bath. It is demonstrated that entanglement can be controlled and tuned by varying the anisotropy parameter γ, the ratio of magnetic field h and exchange interaction J in the Hamiltonian and three different exchange interaction strengths: J (between environment spins) , J' (impurity - impurity) and JJ' (between impurities and environment), respectively.

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