

Abstract Submitted
for the PSF15 Meeting of
The American Physical Society

Effect of Broken Time-Reversal Symmetry on the Interaction Between Two Localized Magnetic Moments in a Host Solid MOHAMMAD MAHDI VALIZADEH, SASHI SATPATHY, University of Missouri - Columbia — We study the effect of broken time-reversal symmetry on the interaction between two localized magnetic moments in a host material. In presence of the time-reversal and inversion symmetries, tensor and vector Dzyaloshinsky-Moriya (DM) interactions vanish, and this interaction shows a symmetric Heisenberg form known as Ruderman-Kittel-Kasuya-Yosida interaction. We find that the lack of time-reversal symmetry leads to an anisotropic Heisenberg interaction, which can be written as a tensor DM interaction.

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Date submitted: 04 Oct 2015

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