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Spin Nernst effect and quantum correlation in two-dimensional antiferromagnets[1] LEONARDO LIMA, Centro Federal de Educao Tecnolgica — The spin separation caused by the thermal flow of electrons in condensed matter systems or spin Nernst effect is a phenomenon that has been experimentally observed since some years ago where both spin-up and spin-down electrons are separated with application of an external magnetic field.[1,2] We analyze the influence of the spin Nernst effect on the quantum correlation and quantum entanglement in the two-dimensional antiferromagnet in the checkerboard lattice and in the presence of a Dzyaloshinskii-Moriya interaction using linear spins waves. We present results for the effect of the coupling parameters on von Neumann entropy.[3] In addition, we analyze the effect on longitudinal spin conductivity, either.[4] REFERENCES [1] Peng Sheng, Yuya Sakuraba, Yong-Chang Lau, Saburo Takahashi, Seiji Mitani, Masamitsu Hayashi, Science Advances 03, e1701503 (2017). [2] S. Meyer, Y.-T. Chen, S. Wimmer, M. Althammer, T. Wimmer, R. Schlitz, S. Geprgs, H. Huebl, D. Kdderitzsch, H. Ebert, G. E. W. Bauer, R. Gross, S. T. B. Goennenwein, Nat. Mater. 16, 977 (2017). [3] Leonardo S. Lima, J. Magn. Magn. Mater. 500, 166427 (2020). [4] L. S. Lima, Physica E: Low-dimensional Systems and Nanostructures, 128, 114580 (2021)

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