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Proximity Anisotropic Magnetoresistance in Graphene JEONGSU LEE, JAROSLAV FABIAN, Institute for Theoretical Physics, University of Regensburg, 93040 Regensburg, Germany — We theoretically investigate charge transport in graphene that is on a ferromagnetic-insulator substrate. The substrate induces spin polarization in graphene—ferromagnetic proximity effect—as demonstrated recently experimentally [1]. We show, using realistic models [2, 3], that the presence of spin-orbit coupling in proximity ferromagnetic graphene leads to anisotropic magnetoresistance whereby graphene's resistance changes with varying magnetic field orientation (both in and out of plane). We evaluate the magnitude as well as the angular dependence of this novel effect using conventional transport models [4] and propose specific experimental schemes to measure it. This work is supported by DFG SFB 689. References [1] Z. Wang, C. Tang, R. Sachs, Y. Barlas, and J. Shi, Phys. Rev. Lett. 114, 016603, (2015) [2] M. Gmitra, D. Kochan, and J. Fabian, Phys. Rev. Lett. 110, 246602 (2013). [3] M. Gmitra, S. Konschuh, C. Ertler, C. Ambrosch-Draxl, and J. Fabian, Phys. Rev. B 80, 235431, (2009) [4] S. Adam, E. H. Hwang, V. M. Galitski, and S. Das Sarma, Proc. Natl. Acad. Sci. U.S.A., 104, 18392, (2007)

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