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Optics of midgap impurity states on a surface of a topological insulator JUSTIN WILSON, DMITRY EFIMKIN, VICTOR GALITSKI, CMTc, Dept. of Physics, University of Maryland at College Park — The time reversal symmetry breaking on a surface of a topological insulator leads to a pronounced anomalous quantum Hall effect that can manifest itself in the quantized Kerr and Faraday effects [1,2]. The symmetry can be broken by magnetic impurities introduced to the TI bulk which tend to order and to gap the surface spectrum. We investigate the role of midgap impurity states in the surface spectrum in optics, particularly in the Faraday and Kerr effects. 1. J. Maciejko, X.L. Qi, H.D. Drew, S.C. Zhang, Phys. Rev. Lett., 105, 166803 (2010). 2. W.-K. Tse and A. H. MacDonald, Phys. Rev. B 82, 161104 (2010).

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