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Frequency dependence of the intrinsic Hall conductivity in a chiral $p + ip$ superconductor with impurities[1] PAVEL NAGORNYKH, ROMAN LUTCHYN, VICTOR YAKOVENKO, University of Maryland — We calculate frequency dependence of the intrinsic Hall conductivity induced by impurity scattering in a chiral $p_x + ip_y$ superconductor. We find that, at large frequencies compared to the superconducting gap ($\Omega \gg \Delta$), the real part of the intrinsic Hall conductivity at zero temperature is proportional to $\Delta/\Omega^3 \log(\Omega/2\Delta)$. Using our results for the Hall conductivity, we estimate the Kerr angle and compare it with the experimental data on Sr_2RuO_4 by Xia et al., Phys. Rev. Lett. 97, 167002 (2006).

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