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Andreev-Bragg reflection from an Amperian superconductor PAUL BAIREUTHER, TIMO HYART, BRIAN TARASINSKI, CARLO BEENAKKER, Instituut-Lorentz, Universiteit Leiden — We show how an electrical measurement can detect the pairing of electrons on the same side of the Fermi surface (Amperian pairing), recently proposed by Patrick Lee for the pseudogap phase of high-T_c cuprate superconductors. Bragg scattering from the pair-density wave introduces odd multiples of $2k_{\rm F}$ momentum shifts when an electron incident from a normal metal is Andreev-reflected as a hole. These Andreev-Bragg reflections can be detected in a three-terminal device, containing a ballistic Y-junction between normal leads $(1, 2)$ and the superconductor. The cross-conductance dI_1/dV_2 has the opposite sign for Amperian pairing than it has either in the normal state or for the usual BCS pairing.

Paul Baireuther
Instituut-Lorentz, Universiteit Leiden

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