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Quasilinear quantum magnetoresistance in pressure-induced superconductor CrAs QUN NIU, WING CHI YU, KING YAU YIP, ZI LI LIM, Department of Physics, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong, China, HISASHI KOTEGAWA, EIICHI MATSUOKA, HITOSHI SUGAWARA, HIDEKI TOU, Department of Physics, Kobe University, Kobe 658-8530, Japan, YOUICHI YANASE, Department of Physics, Kyoto University, Kyoto 606-8502, Japan, SWEE KUAN GOH, Department of Physics, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong, China, THE CHINESE UNIVERSITY OF HONG KONG COLLABORATION, KOBE UNIVERSITY COLLABORATION, KYOTO UNIVERSITY COLLABORATION — We have measured the transverse magnetoresistance of CrAs under pressure. Pressure-induced superconductivity was recently observed in CrAs in the vicinity of the magnetic order. The low-temperature magnetoresistance shows non-saturating quasilinear magnetic field dependence up to 14 T in the pressure range close to where the superconducting transition temperature is maximised. Our bandstructure calculations reveal a subtle band crossing near the Y-point of the Brillouin zone, which we argue is responsible for the observed quasilinear magnetoresistance. Comparison with CrP, which exhibits conventional quadratic magnetoresistance will be made and discussed in this presentation.

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