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Pulsed-field study of the interference commensurate effect in quasi-one-dimensional organic conductors[1] J. ROY, J.I. OH, H. YOSHINO[2], P. DHAKAL, M.J. NAUGHTON, Boston College — We report angle-dependent magnetoresistance oscillations for fields up to 43 T oriented mainly in the most conducting ***x-y*** plane, with small field component along the least conducting ***z*** axis, in the q1d compounds $(TMTSF)_2ClO_4$ and $(DMET)_2I_3$ at 1.5 K. A hybrid plastic-metal cryoprobe system with pseudo dual-axis rotation has been built for these pulsed-field measurements. Due to the interference commensurate effect, (aka Lee-Naughton oscillations) [1-3], we have observed rich magnetoresistance oscillations, resulting from an interference effect of commensurate electron trajectories in the extended Brillouin zone. Also, we have found that, as theoretically expected [2], field-dependent magnetoresistance shows 1D and 2D transport behavior at local resistance maxima andminima (versus field angle), respectively.
[1] I.J. Lee and M.J. Naughton, Phys. Rev. B **57**, 7423 (1998).
[2] A.G. Lebed, *et al.*, Phys. Rev. Lett. **91**, 187003 (2003).
[3] H.I. Ha, *et al.*, Phys. Rev. B **73**, 033107 (2006).

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