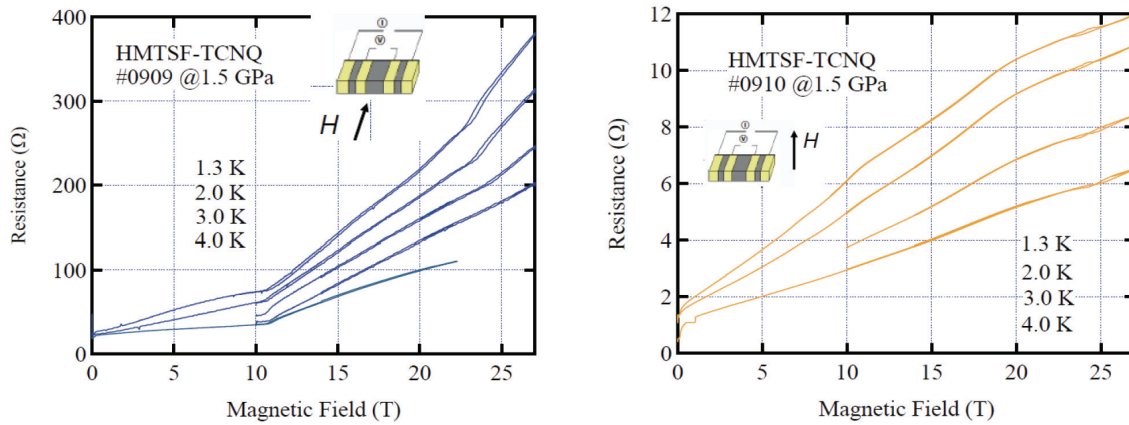


Field-Induced Quantum Magnetic Phases

in the CDW Organic Conductor HMTSF-TCNQ

CDW 有機伝導体 HMTSF-TCNQ における磁場誘起量子磁気相



The magnetoresistance of quasi-1D two-chain organic conductor HMTSF-TCNQ, which shows charge density wave transition at ambient pressure, was studied at 1.5 GPa up to 27 T. We found a kink structure in the magnetoresistance reminiscent of field-induced spin density wave at an intermediate pressure of 1.5 GPa between 0 and 2 GPa. Figures above show that these kink structure are seen in both directions of magnetic field. We speculate that these are successive quantum phases induced by magnetic field.

Grad. School of Sci., Osaka City Univ.: K. Murata, K. Yokogawa, K. Masuda, H. Yoshino
RIKEN: R. Kato

IMR, Tohoku University: T. Sasaki

Reference:

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常圧では電荷密度波 (CDW) を示す. 2 鎖系 1 次元有機伝導体 HMTSF-TCNQ の 1.5GPa の圧力下での磁気抵抗を 27 T まで調べた. その結果, 磁気抵抗に図のような構造が現れた. 但し, 0, 2 GPa では見えない.磁場誘起 SDW (FISDW) を想起させる. 但し, 図のように結晶面に垂直でも, 平行でも観測される.この全く新しい現象は磁場誘起の CDW ではないかと推察している.

大阪市立大学: 村田恵三, 横川敬一, 増田耕育, 吉野治一

理研: 加藤礼三

東北大学金属材料研究所: 佐々木孝彦