

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Soliton Wall Superlattice Phase
in Organic Conductor $(\text{Per})_2\text{Pt}(\text{mnt})_2$ in a Magnetic Field SI WU, AN-
DREI LEBED, Dept. of Physics, University of Arizona — We suggest a model [1]
to explain the appearance of a high resistance high magnetic field charge-density-
wave (CDW) phase, discovered in quasi-one-dimensional (Q1D) organic conductor
 $(\text{Per})_2\text{Pt}(\text{mnt})_2$. In particular, we show that the Pauli spin-splitting effects improve
the nesting properties of a realistic Q1D electron spectrum, and, therefore, a high
resistance Peierls CDW phase is stabilized in high magnetic fields. In intermediate
and very high magnetic fields, a periodic soliton wall superlattice (SWS) phase is
found to be a ground state. We suggest to study the predicted phase transitions
between the Peierls and SWS CDW phases to discover a unique SWS state. [1] A.G.
Lebed and Si Wu, Physical Review Letters, submitted (2006).

Si Wu
Dept. of Physics, University of Arizona

Date submitted: 20 Nov 2006

Electronic form version 1.4