

Abstract Submitted
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Sorting Category

4d M-I Transitions

Electronic Transport in Degenerately
Doped Germanium in Strong Magnetic Fields
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Laboratory. -- We have produced a high
resistance insulating state at low temperatures
in degenerately doped Ge:Sb by the application
of large magnetic fields. The magnetic field
continuously "tunes" the carrier density and
mobility by shrinking the impurity
wavefunctions which increases the binding
energy and the disorder potential. We have
driven samples with electronic densities of
 $3 \times 10^{17} \text{cm}^{-3}$ into the insulating state using
fields to 20 Tesla and have recorded resistance
increases as high as a factor of 10^4 .
Resistivity and Hall data will be presented and
compared with the predictions of conventional
magnetic freeze-out as well as theories of
collective phenomena.

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