Electrical resistivity of disordered monolayer metallic films

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Electron transport through a disordered two-dimensional array of potentials is investigated. The resistivity is calculated according to the Faber-Ziman diffraction model [1] suitably modified for two-dimensional electron gas. The structure factor is obtained by means of numerical simulations. The pseudopotentials are assumed to be the Shaw potentials [2] with appropriate screening [3]. The resistivities of disordered monolayers of alkali metals have been calculated in this model using the parameters which allowed us to explain well the experimental data for the bulk materials [3].

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[1] J. M. Ziman, Phil. Mag. **6** (1961) 1013.
[2] T. E. Faber and J. M. Ziman, Phil. Mag. **11** (1965) 153.
[2] R. W. Shaw Jr., Phys. Rev. **174** (1968) 769.
[3] P. Jarguz and A. Paja, *to be published*.

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