

The classical Hall effect in disordered alloys is studied within the coherent potential approximation, explicit formulas are applied to the model system of the square lattice with on-site disorder, and temperature dependence of the Hall coefficient is examined in the pure model.

An approach to describe the effect of quantizing magnetic fields is outlined (related to the integer quantum Hall effect in two-dimensional systems), and its application to a three-dimensional tight binding model of alkali metals is discussed.

Finally, within the context of the fractional quantum Hall effect with filling factor  $\nu = 1/3$  are examined two specific problems, whose resolution is sought using a single mode approximation.