1044-82-220   **Gunter Stolz*** (`stolz@math.uab.edu`), Department of Mathematics, CH 452, Birmingham, AL 35294-1170. *Probabilistic models in the quantum mechanics of disordered media.*

We will introduce some of the probabilistic models which are used by mathematical physicists to describe the quantum mechanical properties of disordered media such as alloys or amorphous materials. Disorder has strong consequences on the electrical conductivity properties of such materials. We will survey the central problems and current state of the mathematical theory. Some examples will be given which demonstrate how tools from probability have been combined with more traditional methods from mathematical physics to make progress on these problems. (Received September 02, 2008)