Calculations of the Pion-Nucleus Inelastic Cross Sections Using the Microscopic Optical Potential

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The calculations of the pion-nucleus inelastic scattering are made using the microscopic optical potential (OP), developed basing on the elementary pion-nucleon scattering amplitude and the density distribution function of a target nucleus. Within this OP the elastic scattering data on Si, Ni and Pb were explained by solving the relativistic wave equation, and then the same parameters are applied for estimations of the respective data on inelastic cross sections. In calculations, the microscopic transition potentials was constructed as a derivative of both the original OP and of the density distribution functions of target nuclei as well. The results obtained for inelastic cross sections in both approaches are discussed and compared to the existing experimental data.