

# Simulations of Mini-Orange Beta Spectrometer Transmission Curves in Different Magnets Configurations

**P. Detistov, D. Balabanski**

Institute of Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, Tzarigrad Road 72, BG-1784 Sofia, Bulgaria

As a part of a project between the INRNE and the National Science Fund, beta spectrometer of type “mini-orange” has been constructed. The spectrometer consists of three different SmCo5 magnets shapes made in six different configurations. This work presents investigations of the electron transmission curves using GEANT4 Monte-Carlo simulation tool using the real measured map of the spectrometers magnetic field. The configurations studied consist of 3, 4 and 6 magnets of the same type. The electrons are detected using Si detector behind the spectrometer at variable positions. Optimization of the set-up is made for number of electron energies.