Abstract Submitted for the HAW05 Meeting of The American Physical Society

Two and Three-Body Coulomb Scattering in Nucleus SHIN-SHO ORYU, SATOSHI NISHINOHARA, Tokyo University of Science, ORYULAB TEAM — The three-body Coulomb scattering is one of the unavoidable issue in the nuclear reaction problems at low energies. Even for the two-body Lippmann-Schwinger (LS) equation, it could not be solved in the momentum space by the reason that the potential singularity coincides with the Green's function pole. Recently, we found a method to avoid the long range divergence in the momentum space calculation in which an auxiliary potential (AP) is adopted. The on- and off-shell Coulomb T-matrix can be obtained by the aid of a K-matrix method with respect to AP. By this formulation, it is found that nuclear and charged particle scattering problems are successfully calculated not only for the two-body LS-equations but also for the three-body Faddeev equations.

> Shinsho Oryu Tokyo University of Science

Date submitted: 25 May 2005

Electronic form version 1.4