Numerical investigations of the three-dimensional proton-proton screened Coulomb t-matrix

R. Skibiński, J. Golak, and H. Witała

M. Smoluchowski Institute of Physics,

Jagiellonian University, PL-30059 Kraków, Poland

(Dated: January 3, 2019)

Abstract

We demonstrate behaviour of the momentum space screened Coulomb t-matrix, obtained by a numerical solution of the three-dimensional Lippmann-Schwinger equation. Examples are given for different types of screening. They prove that it is possible to obtain numerically a reliable three-dimensional screened Coulomb t-matrix, what is important in view of its application in few-body calculations.

PACS numbers: 21.45.-v, 21.45.Bc, 25.10.+s, 25.40.Cm