

SEPARATION OF VARIABLES AND SOME
SOLUTION OF A TWO-CENTER PROBLEM
WITH A CONFINEMENT-TYPE POTENTIAL

V. Yu. Lazur, I. V. Tsogla^{1,2}

Uzhgorod National University,
Department of Theoretical Physics
(46, Pidhirna Str., Uzhgorod 88000, Ukraine),
¹Austro-Ukrainian Institute for Science and Technology
(c/o AUI, Institute for Theoretical Physics
of Vienna University of Technology,
Wiedner Hauptstrasse 8-10/136, A-1040 Wien, Austria),
²On leave from Uzhgorod National University, Ukraine

S u m m a r y

A group of hidden dynamic symmetry in a model of quantum-mechanical problem of two-centers with Coulomb and oscillator interactions is obtained. The group properties of the system of PDE is studied. The similarity solutions of one-parameter subgroups of the Poincaré and Galilei groups are received. The obtained solutions are used for the calculation of energy terms of the problem.