Abstract

This paper adresses a different methods for solving a sixdimensional integral in a brute force way. The integral of interest is of the wave function for a helium atom with to electrons in order to determine the ground energy between them. We will assume that the wave function for each elektron can be modelled like the single - particle wace function of an electron in the hydrogen atom.

The methods used are Guass-Legandre and Gauss-Laguerre quadrature and Monte-Carlo in order to compare accuaracy. Gauss - Laguerre is rather unstable when changing the number of integrationpoints, N. Its accuaracy is also rather large compared with Gauss- Laguerre.

Monte-Carlo....