THE PHASE ANALYSIS OF α-α ELASTIC SCATTERING IN THE 53,4 - 99,5 MeV ENERGY REGION

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Phase analysis of ^{4}He(α, α)^{4}He elastic scattering was made in the energy region E_α = 53,4 - 99,5 MeV. Energy dependence of phase shifts was received and for the first time the possible errors of phase shifts was estimated by classical schema $\chi^2(a_{opt.} + \Delta a) = \chi^2_{opt} + 1$. It was demonstrated the significance of correct determination of phase shift errors for analysis of the energetic behavior of phase shift and real conclusions about resonance in the system. Local minimum in energetic dependence of phase shifts with L = 2 and 4 are observed. There are correspondent of ^{8}Be excitation energy near 29 and 31 MeV accordingly. Under the energy region 31 and 37 MeV the resonance-like structure in energetic dependence of phase L = 6 are presented. It was discussed the possible explanation of those resonances as rotational band which are built for two α-particles and one is in the excitation state.