

## Reacciones de transferencia en el sistema ${}^6\text{Li}+{}^{89}\text{Y}$ con energías cerca de la barrera coulombiana

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The objective of this work is to study of three possible transfer reactions that can occur in the system  ${}^6\text{Li} + {}^{89}\text{Y}$  at energies close to the Coulomb barrier. To analyse the relevance of the different transfer mechanisms, coupled reaction channels calculations (CRC) were performed, using the FRESKO code. The one-neutron transfer reaction was reanalyzed, taking into account the results of Zhang et al 2018. For the one-proton transfer reaction, calculations using spectroscopic amplitudes from extensive shell model calculations and assuming value equal to 1.0 were performed, with the goal to identify the influence of increase these amplitudes in the cross section. In the one-deuteron transfer reaction there were take into account two kind of mechanism: the direct transfer reaction and the sequential transfer reaction in which a proton is transferred firstly then a neutron or a neutron is transferred followed a proton. The São Paulo potential (SPP) was used for the imaginary and real parts of the optical potential and a Woods-Saxon potential generate the single-particle wave functions was employed. As a result for the one-neutron transfer for the  ${}^{89}\text{Y}({}^6\text{Li}, {}^5\text{Li}){}^{90}\text{Y}$  reaction, we obtained a predominance of the transfer reaction. Otherwise, for the one-proton transfer  ${}^{89}\text{Y}({}^6\text{Li}, {}^5\text{He}){}^{90}\text{Zr}$  and one-deuteron transfer  ${}^{89}\text{Y}({}^6\text{Li}, {}^4\text{He}){}^{91}\text{Zr}$  reactions, the theoretical results indicated that other reactions, such as the breakup followed by incomplete fusion, might be more relevant reaction mechanisms than the transfer one. this fact allows us to believe that in order to obtain a good description of the experimental data, these other reactions mechanisms must be included in the coupling scheme.