

Abstract Submitted
for the 4CF09 Meeting of
The American Physical Society

Influence of spin on the fragment Anisotropies A.N. BEHKAMI, Fars Science and Research Center, Islamic Azad University, Iran, M. GHODSI, Physics Department of Babolsar University, Iran — Several selected fission fragment angular distributions when at least one of the spins of the projectile or target is appreciable have been investigated. The known experimental data for example $^{11}\text{B}+^{209}\text{Bi}$ was analyzed by means of the Couple Channel spin formulism. This formulism suggests that the projectile spin has sizable effect on the angular anisotropies within the limits of energy near the fusion barrier. The analysis of the fission fragment angular distributions has also made using the statistical secession model (SSM). Variance K_o^2 of the K distribution are compared with their corresponding S_o^2 values. It turns out that the variances from these two models differ by about 20% for most cases studied. However, in the case of $^{12}\text{C}+^{237}\text{Np}$ the value of K_o^2 is comparable with its corresponding S_o^2 value. This suggests that the effect of the projectile spin on angular anisotropies is more noticeable. The effect of the choice of the level density parameter of the compound nucleus on angular anisotropies has also been investigated. It is found that angular anisotropies are very sensitive to level density parameter. It turns out that the experimental anisotropies are well produced with the model calculation using higher values of the level density predicted by Fermi gas model. This effect will be presented and discussed.

A. N. Behkami
Fars Science and Research Center, Islamic Azad University, Iran

Date submitted: 04 Sep 2009

Electronic form version 1.4