



V.V. Gaganov

Russian Federal Nuclear Center – the All-Russian Research Institute of Experimental Physics, 607190,  
Sarov, Nizhnij Novgorod reg., pr. Mira -37  
gavaler@post.com

*DT-neutron spectra calculated using the SRIANG code was benchmarked against the results obtained by widely used Monte Carlo codes: PROFIL, SHORIN, TARGET, ENEA-JSI, MCUNED, DDT and NEUSDESC. The comparison of the spectra obtained by different codes confirmed the correctness of SRIANG calculations. The cross-checking of the compared spectra revealed some systematic features and possible errors of analysed codes.*

*Keywords:*

neutron generator; DT-neutrons; source simulation; spectra comparison

## 1. Introduction

Precise experiments on neutron generator require accurate data on the energy and angular distribution of emitted neutrons. Several codes have been developed for spectral calculation considering the deuteron straggling and the detector size: PROFIL, SHORIN, TARGET, ENEA-JSI, MCUNED, DDT and NEUSDESC. However, some of them are not freely available; others operate only as part of a large Monte Carlo package. In addition, the neutron spectra calculated by these codes have noticeable differences.

The new FORTRAN-code SRIANG was developed for quick spectral estimation. DT-neutron spectra calculated using the SRIANG code was benchmarked against the results obtained by seven above-mentioned codes.

## 2. Short description of the codes

The SRIANG code follows a two-step algorithm: in the first step, a set of deuteron trajectories in the target (EXYZ.TXT file) is simulated by the TRIM code [Ziegler et al., 2010], and in the second

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