

Nuclear Angular Correlation on ^{57}Co

Time Different Perturbed Angular Correlation (TDPAC), which belongs to a family of hyperfine method, gives an information on the hyperfine splitting of specific nuclei. This presentation provides a summary of a basic theory of TDPAC with focusing on application of ^{57}Co , including a derivation perturbation function G_{22} for electric, magnetic, and mixing interaction(s). The technique is based on the observation of time and spacial correlation between two succeeding photons emitted by one nucleus, that allows determination of quadrupole splitting even in liquid samples. Moreover, in the case of a weak hyperfine splitting, this method allows to distinguish between magnetic or quadrupole origin of splitting. We also demonstrate an experimental setup for TDPAC based on NIM modules utilizing LaBr:Ce detector.

Primary author: Ms ŠRETROVÁ, Pavla (Palacký University Olomouc)

Co-authors: Mr PROCHAZKA, Vit (Palacký University in Olomouc); Mr VRBA, Vlastimil (Palacký University in Olomouc)

Presenter: Ms ŠRETROVÁ, Pavla (Palacký University Olomouc)

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