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# Nuclear Angular Correlation on 57Co

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 summery of a basic theory of TDPAC with focusing on application of 57Co, including a derivation perturbation function G22 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.

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