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Mössbauer specrometer with intelligent modulation of gamma ray energy

This talk reports the development of a novel Mössbauer spectrometer. This spectrometer utilizes compactRIO DAQ system with built-in FPGA array, intelligent gamma ray detector and brings new measuring methods for increasing the Mössbauer spectra linearity. For example, the utilization of sine velocity waveform followed by linearization process or time-mode Mössbeuer spectrometer. Mössbauer spectra linearity is a critical parameter to determine Mössbauer spectrometer accuracy. The obtained data demonstrate that spectra measured on this spectrometer have lower nonlinearity and line width parameters in comparison with those measured using the traditional methods.

Summary

This talk deals with gamma ray detectors, data acquisition, signal processing, programming in LabVIEW environment and virtual instrumentation.

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