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Measuring Picoseconds and Gigahertz: Electronics and Data Acquisition

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Particle and Nuclear Physics uses all kinds of detectors to measure properties such as energy and time of elementary particles. All detectors produce electrical signals, which need to be amplified, digitized and recorded by special electronics and computers. Modern experiments pose very high demands on these systems in accuracy such as time resolutions down to a few Picoseconds as well as the amount of produced data reaching many GBytes per seconds. This talk gives an introduction to basic digitization techniques, signal processing, triggering, bus standards and data acquisition software.

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