

Alignment of silicon strip detectors on a micrometer scale

Tuesday, 11 November 2014 10:15 (25 minutes)

Using detectors with high spatial resolution demands precise knowledge of the relative position of detectors with respect to each other. Mechanical measurements have a limited precision, which is not always sufficient. In the LAND-setup at GSI, 4 silicon strip detectors are used to track beam particles and reaction products upstream as well as downstream from the target. The detectors have a spatial resolution in the order of 10 microns. Aligning several such detectors mechanically along the beam axis with this precision is not possible without sophisticated methods. Here an alternative approach is presented where the detectors are moved virtually after the experiment in a way that their positions fit the measured ion tracks. The method using the software program Millepede II is presented and results are discussed.

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Session Classification: SFAIR

Track Classification: SFAIR