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State of the art and perspectives for Si microstrip tracking systems in space

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Solid-state systems based on Si-microstrip sensors are a consolidated technology for precision particle tracking in space, as first demonstrated by the operations of the AMS-01 detector and confirmed by PAMELA, Fermi-LAT, AGILE, AMS-02, DAMPE. The next generation of large acceptance AstroParticle space detectors (e-ASTROGAM, AMEGO, PANGU, HERD, ALADInO, AMS-100) requires larger surface coverages with Si detectors. Si microstrip detectors are the most suitable solution to instrument such detectors, featuring a larger number of electronics channels, while coping with the limitations on power consumption in space.

In this talk we'll review the state of the art of the tracking systems in space and of the sensors technologies currently used in active or near future experiments, and the potential technological improvements that can be investigated, developed and adopted for the next generations of large acceptance AstroParticle space detectors.

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