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Type : **Poster**

## **Construction and performance of the AMS-02 Silicon Tracker**

### **Abstract content**

A silicon microstrip Tracker embedded in a 0.8 T magnetic field constitutes the core of the AMS-02 experiment. Eight layers of double sided microstrip sensors perform simultaneous measurements of position and energy loss in silicon along the particle trajectory. The silicon tracker will determine the rigidity ( $R$ ) and the charge sign of particles up to several TVs, with a relative resolution  $\sim 2.5\%$  at  $R < 100$  GV thanks to its high spatial resolution. Moreover the low noise and wide dynamic range of the silicon readout electronics allow to exploit the energy loss measurements to determine the particle absolute charge for nuclei up to Fe.

The AMS Tracker construction has been completed and it will be integrated into the AMS experiment during the fall 2007. The performance of the silicon detectors observed under various beam tests will be presented focusing on the spatial resolution and on the charge separation capability. The performance of the six inner planes, already integrated in the flight structure, with cosmic rays on ground will also be presented.

### **If this papers is presented for a collaboration, please specify the collaboration**

AMS Silicon Tracker Collaboration

### **Summary**

### **Reference**

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**Session Classification :** Posters 1 + Coffee

**Track Classification :** OG.1.5