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First tracks and initial timing results with Timepix4 ASIC

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A single arm beam telescope based on the Timepix4 ASIC was built in order to
perform first tests of synchronous readout and track reconstruction.
The telescope is composed of four planes with n-on-p silicon sensors.
Two of these planes are instrumented with 300 μm thick sensors tilted with respect to the beam, to provide high quality spatial measurements, while the remaining two have
100 μm thick sensors to achieve a better timing response.
Each detector assembly (sensor + Timepix4 ASIC) is readout with SPIDR4 system developed by Nikhef and ASI.
They are cooled by a 3D printed titanium blocks directly attached to the test PCB, through which a cooling fluid is circulated.
Both the cooling block and PCB have a circular cut-out to minimise the amount of material traversed by incident particles.
In this presentation, the initial results of the timing and spatial resolution of this telescope will be shown.

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