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# GigaTracker, a Thin and Fast Silicon Pixels Tracker

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GigaTracker, the NA62's upstream spectrometer, plays a key role in the kinematically constrained background suppression. It is made of three independent stations, each of which is a six by three cm2 hybrid silicon pixels detector. In order to meet the physics goals of NA62 the pixel hit time resolution must be better than 200 ps. The material budget must be kept less than 0.5 % X0.
The 200µm thick sensor is divided into 18000 300µm × 300µm pixels bump-bounded to ten independent read-out chips. The chips use an end-of-column architecture and rely on time-over-threshold discriminators. A station can handle a crossing rate of 750MHz. Microchannel cooling technology will be used to cool the assembly. It allows us to keep the sensor close to 0◦C with 130µm of material in the beam area.
The sensor and read-out chip performance were validated with a 45 pixels demonstrator with a laser test setup and during a test beam. The time resolution was found to be better than 175 ps, well within the specifications.

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