

The Gigatracker, the silicon beam tracker for the NA62 experiment at CERN.

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The Gigatracker is the NA62 beam tracker. It is made of three $63.1\text{mm} \times 29.3\text{mm}$ stations of $300\mu\text{m} \times 300\mu\text{m}$ hybrid silicon pixel detectors installed in vacuum ($\sim 10^{-6}\text{mbar}$).

The beam particles, flowing at 750 MHz, are traced in 4-dimensions by means of time-stamping pixels with a design resolution of 200ps . This performance has to be maintained despite the beam irradiation amounting to a yearly fluence of 2×10^{14} 1 MeV eq. n/cm².

The detector material minimization is paramount, as the detector faces the full beam. The station material budget is reduced to $0.5\%X_0$ by using (HEP world first) microchannels cooling.

We will describe the detector design and performances during the NA62 runs.

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