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## The NA62 GTK, from silicon microchannel cooling plates to tracking detectors

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Since the beginning of the NA62 experiment, 9 silicon microchannel cooling plates have been integrated into GigaTracKer (GTK) modules. In 2014, the first module was installed in the NA62 beam line, pioneering the use of microfluidic devices for the thermal management of detectors in HEP experiments. In 2016, three fully functional GTK modules were installed in the and they were successfully operated without noise for the physics run.

The GTK is an essential element in the  $K^0 \rightarrow \pi^0 \pi^0$  measurement. It determines the momentum and the direction of the kaon entering the NA62 experiment with a time resolution of 100 ps, better than the 200 ps expected from the design. About  $5 \times 10^{11}$   $K^0$  decays have been taken by the NA62 experiment to study the  $K^0 \rightarrow \pi^0 \pi^0$  decay.

The poster will highlight the microfabrication process of the silicon cooling plates, the construction of the modules as well as their installation and operation in the beam line.

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