



Contribution ID: 58

Type: **not specified**

Micro-channel cooling for pixel detectors

Thursday 3 May 2012 20:00 (1 hour)

In HEP experiments the use of pixel detectors requires that high power density in the sensitive area (up to 2 W/cm²) should be carried away by efficient thermal systems, eventually integrated in the light mechanical support structures.

The micro-channel cooling technology is featured by a highly efficient thermal exchange and it can profit by the miniaturization technique applied on composite materials. Thus a viable solution based on microchannel can be provide both for the thermal and mechanical structure of a silicon module.

We present the latest progress on the development of mechanical supports with microchannel cooling for pixel detector systems, designed in particular to match the specifications of the most internal layer of the Silicon Vertex Tracker of the Super-B experiment.

The low-material budget prototypes have thickness of 0.11 % X₀ and the results of the characterization tests performed at the thermal-fluid-dynamic facility of the INFN Pisa are reported.

Author: BOSI, Filippo (INFN Pisa)

Presenter: BOSI, Filippo (INFN Pisa)

Session Classification: Posters