

Thermal mockup studies of BelleII vertex detector

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The Belle II experiment is currently under construction at the e+e- collider SuperKEKB in Japan. Its vertex detector (VXD), comprising a two layer DEPFET pixel detector (PXD) surrounded by four layers of double sided silicon strip detector (SVD), is indispensable for the accurate determination of the decay point of B or D mesons as well as track reconstruction of low momentum particles. In order to guarantee acceptable operation conditions for the VXD, the cooling system must be capable of removing a total heat load of about 1 kW from the very confined VXD volume. Evaporative two-phase CO₂ cooling in combination with forced air flow has been chosen for the VXD cooling system. To verify and optimize the vertex detector cooling concept, a full-size VXD mockup is constructed at DESY. In this talk, thermal and mechanical studies of Belle II VXD mockup are presented.

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