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Helium-3 thermal neutrons counters in the SuperKEKB commissioning detector

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Thermal neutron detectors have been installed into BEAST II, the commissioning detector of the SuperKEKB accelerator. These detectors use helium-3 to detect neutrons via the capture process ${}^3\text{He}+n \rightarrow {}^3\text{H}+p + 720\text{keV}$ and are only sensitive to thermal neutrons, and are therefore an excellent means of monitoring the thermal neutron flux in the BEAST. Commissioning began in February and continued until the end of May, providing a large variety of beam conditions in which to measure the neutron flux. These flux measurements are compared with simulation in order to test the validity of the simulations.

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