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Radiation Monitoring with Diamond Sensors for the Belle-II Vertex Detector

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The Belle II detector is currently under construction at the SuperKEKB electron-positron high-luminosity collider that will provide an instantaneous luminosity 40 times higher than that of KEKB. Therefore the Belle-II VerteX Detector (VXD) will operate in a very harsh environment. A radiation monitoring and beam abort system is needed to safely operate the VXD detector in these conditions.
The Belle II radiation monitoring system will be based on 20 single crystal diamond sensors placed in 20 key positions in the vicinity of the interaction region.
In this contribution we describe the system design and we present the procedures followed for the characterisation and calibration of the diamond sensors. We discuss also the performance of the prototype system during the first SuperKEKB commissioning phase in February-June 2016.

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