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Imaging the LHC beams with silicon and scintillating fibre vertex detectors

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The LHCb Vertex Locator (VELO) is used to reconstruct beam-gas interaction vertices which allows one to obtain precise profiles of the LHC beams.
In LHCb, this information is combined with the profile of the reconstructed beam-beam collisions and with the LHC beam currents to perform precise measurements of the luminosity.
This beam-gas imaging (BGI) method also allows one to study the transverse beam shapes, beam positions and angles in real time. Therefore, a demonstrator beam-gas vertex detector (BGV) based on scintillating fibre modules has been built and installed in LHC Ring 2 (at point 4). We present first results of the commissioning of this device and compare with recent results obtained in the LHCb experiment.

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