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Test of ITk 3D sensor pre-production modules with ITkPixv1.1 chip

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ITk detector, the new ATLAS tracking system at High Luminosity LHC, will be equipped with 3D pixel sensor modules in the innermost layer (L0). The pixel cell dimensions will be either 25x100 µm2 (barrel) or 50x50 µm2 (endcap), with one read-out electrode at the centre of a pixel and four bias electrodes at the corners. Sensors from pre-production wafers (50x50 µm2) produced by FBK have been bump bonded to ITkPixv1.1 chip at IZM. Bare modules have been assembled in Genoa on Single Chip Cards and characterized in laboratory and at test beam.

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