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Development of multi-tubes detectors at the ILL

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The construction of bidimensional tube-array detectors at the ILL, in particular the one for the SANS instrument D22, allowed to develop a purpose-built charge division electronics and to explore others structures having similar detection principles. One of these is the so-called Multitube in which, instead of having independent position sensitive tubes held together by a mechanical support, the stainless steel tubes are welded on both ends to 2 common flanges, sharing the same gas volume. Several of these detectors have been built and installed; the instrument IN5 at the ILL will soon be equipped with 12 multitube modules of 32 tubes each, covering a total sensitive area of about 30 m². Another development is the Monobloc Multitube, made out of a single Aluminum bloc, with channels machined by wire-cut EDM; the channels can have almost any shape, the front window can be a few mm thick and the separation walls between channels can be as thin as 0.5 mm. The first of these detectors will be installed on the new reflectometer FIGARO at the ILL, and 2 more will be fabricated, one for the modernization of D17 and another one for the construction of the SANS instrument D33.

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