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A new transparent XY-MicroMegas neutron beam profiler

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A MicroMegas detector based on microbulk technology with an embedded XY strip structure was developed, obtained by segmenting both the mesh and the anode. This results in a very lowmass device with good energy resolution capabilities. Such a detector is practically "transparent"to neutrons, being ideal for in-beam neutron measurements. It will be used as a neutron beam monitor and profiler at neutron TOF facilities, as the n_TOF facility (CERN, Geneva), GELINA (IRMM, Geel) and NFS (GANIL, Caen). The development of such a detector offers new possibilities for the measurement of neutron induced charged particle reaction cross sections, as well as the angular distributions of the emitted particles. The amplification area of 60x60 mm2 is separated in 60+60 strips. The detector data acquisition system is based on the AGET - reduced CoBo technology. Appropriate front-end electronics have been developed for the protection of the AGET chips, the voltage distribution and the readout of the strips. The whole system was tested in neutron beam at the GELINA facility,
showing good energy resolution and the potential for good spatial resolution, and the first results will be presented.

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