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GridPixes and their Applications

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A GridPix detector is made of a highly pixelized readout ASIC combined with a Micromegas as a gas amplification stage. The later one is realized by photolithographic postprocessing, which allows for a high precision and good alignment of each Micromegas hole with a readout pixel. Because of this arrangement, the charge signal of a primary electron can be detected separately leading to an excellent spatial and time resolution. The high resolution can be exploited in many different ways for example in tracking particles with high precision, in determining the energy loss of a particle or in evaluating the event shape. We are studying the performance of GridPixes for different applications such as tracking in a TPC, neutron detectors, low background X-ray detectors, polarimetry detectors or demonstrators for the general public. We will report on these detectors as well as the implementation of the Timepix3 readout in the Scalable Readout System (SRS) of the RD51 collaboration.

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