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# Development and simulation of a new preshower detector for the FASER experiment at the LHC

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The design of a new high-granularity pre-shower detector for the FASER experiment at LHC is in progress, with the purpose of measuring and discriminating electromagnetic showers generated by photons with O(TeV) energies and separation down to 200  $\mu\text{m}$ . The new pre-shower will comprise six planes of monolithic silicon pixel detectors with hexagonal pixels of 65  $\mu\text{m}$  side.

The detector simulation was implemented in Allpix Squared to drive the design of the pre-shower layout and the production of the shower reconstruction algorithms. New modules were developed for the integration of the hexagonal pixel matrix and the simulation of the ASIC charge measurement and digitization circuit.

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