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【375】 Characterisations of the MALTA Monolithic Active Pixel Sensor for the Phase II upgrade of the ATLAS Inner Tracker.

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The LHC will be upgraded to achieve higher instantaneous luminosity. The upgraded machine will be called HL-LHC with the next phase of data taking referred to as Phase II. A novel Monolithic Active Pixel Sensor (MAPS), dubbed MALTA, has been designed and is under investigation to assess its suitability for operation in the outer layers of the Phase II ATLAS pixel detector. A readout system has been developed to cope with the high speeds and asynchronous output of the chip. Test-beam campaigns exposing the prototype to high energy electrons and pions were also conducted for tracking efficiency measurements, radiation hardness and timing studies. An overview of the sensor technology and readout architecture along with preliminary test-beam results are presented.

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