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THOR Particle Processing Unit PPU

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Turbulence Heating ObserveR (THOR) is the first mission ever flown in space dedicated to plasma turbulence. On board THOR, data collected by the Turbulent Electron Analyser, the Ion Mass Spectrum analyser and the Cold Solar Wind ion analyser instruments will be processed by a common digital processor unit, the Particle Processing Unit (PPU). PPU architecture will be based on the state of the art space flight processors and will be fully redundant, in order to efficiently and safely handle the data from the numerous sensors of the instruments suite. The approach of a common processing unit for particle instruments is very important for the enabling of an efficient management for correlative plasma measurements, also facilitating interoperation with other instruments on the spacecraft. Moreover, it permits technical and programmatic synergies giving the possibility to optimize and save spacecraft resources.