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THOR - a mission candidate for ESA M4

Andris Vaivads and the THOR Team
Swedish Institute of Space Physics, Uppsala, Sweden (andris.vaivads@gmail.com)

We present a mission concept THOR (http://thor.irfu.se) that was proposed in the response to the ESA M4 Call. The scientific theme of the THOR mission is turbulent energy dissipation and particle energization. The main focus is on turbulence and shock processes, however areas where the different fundamental processes interact, such as reconnection in turbulence or shock generated turbulence, is also of high importance. The THOR mission aims to address such fundamental questions as how energy is dissipated at kinetic scales, how energy is partitioned among different plasma components, what is the relative importance of waves and coherent structures in the dissipation processes. To reach the goal a careful design work of the THOR mission and its payload has been done and it is based on the earlier mission concepts of Tor, EIDOSCOPE and Cross-Scale. We present the basic concepts of the THOR mission, THOR's payload and the major science questions to be addressed.