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Radio Frequencies Analyser for RELEC Project-New challenge for Space Weather monitoring

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The RELEC satellite will be launched in 2013 into a sun synchronous orbit to height of about 750 km. The aim of the RELEC mission is studying precipitation of magnetosphere relativistic electrons and their impact on the Earth ionosphere and magnetosphere including the observations of fast transient phenomena in the upper atmosphere. It will provide combined observations of UV,X, gamma radiation and charge particle fluxes, as well as electromagnetic fields. The goals of RELEC mission are simultaneous observations of energetic electron and proton fluxes (energy range 0.1–10 MeV) and low frequency (0.1–10 kHz) electromagnetic wave field intensity variations; fine temporal measurements of transient atmospheric events in radio (50kHz–15 MHz), UV, X and gamma ray with a possibility of UV optical imaging with high space resolution km in a wide FOV; and measurements of electron pitch angle distribution in fluxes of a dynamic range from 0.1 to 105 particles $cm-2$ s^{-1}.
The aim of this presentation is to describe the HF wave analyser RFA and to present objective of the proposed investigation for diagnose and monitor the Earth's space environment and obtain a much more complete picture of transport of energy between inner magnetosphere ionosphere system than those available hitherto and for applications in Space Weather services .