



ROSA on board the Indian OCEANSAT-2 satellite mission: an Italian opportunity

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The Indian satellite OCEANSAT-2 will be launched in Spring 2007. The Italian Space Agency (ASI) signed a Memorandum of Understandings (MoU) with the Indian Space Research Organization (ISRO) in which it is agreed to put on-board the OCEANSAT-2 satellite the Italian GNSS receiver devoted to Radio Occultation (ROSA). The antenna of the receiver will be mounted on the aft-velocity direction; therefore it will catch only rising events. The receiver will be able to provide observations both in Open-Loop and in Close-Loop modes. The GPS-Radio Occultation data will be downloaded to the Indian and the Italian ground stations and will be processed by software tools

completely developed by Italian universities and research centres. Therefore, after a brief outline of the Indian mission and ROSA instrument capabilities, our contribution will be focused in describing the system architecture of the ground segment to be established at Space Geodesy Center of Matera and mirrored at Hyderabad in India.

In the second half of the presentation data analysis and computing strategy will be described in detail. In particular we plan to develop tools for Near Real Time as well as Precise Orbit Determination of LEO satellites, bending and impact parameters profiles extraction, ionosphere correction and stratospheric initialization, refractivity, pressure, temperature and humidity profile retrieval, added value services for meteorology, climate and space weather applications. For the development we will make a wide use of a Web-based GRID computing infrastructure just to optimise the time and power for data analysis and where to harmonize in open source mode all the contributions of the scientific partners involved in the project.