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UNDERSTAND THE HUGE DATA THROUGH THE DEEP GEOSPACE : HOW TO ANALYZE AND
TO DESIGN THE FUTURE SPACE MISSION

Abstract

The science of data in Space combines the monitoring of spacecrafts, the radiation data on its instruments and mainly the ones coming from the electromagnetic spectrum. To prepare the Space mission analysis, data is a requirement to provide the operational steps until the Space design. Unlike the Big data on the ground segment, the data incoming from Space is to be considered as huge. The huge data consists of the data far away from the big data known in the ground. Thanks to the first Black Hole image in 2017, Space mission analysis and design from the ground provide a way to understand how to manage the huge level of data. If new Spacecrafts like CubeSat, NanoSat are able to observe the ground as the classical satellites, the geospace observation in the deep Space gives data for Space mission analysis and design through the specificity of Space geography. The huge data techniques for Space operations can be understood as several ways. Those from the Spacecraft in Space like GAIA telescope, Rosetta probe, and those on the ground to design Space. The Space data means the need to describe the characteristics of Space geography links with the data lifecycle, the data dimensions, the new Space requirements, the Space territory and the ground segment relationship to manage and design the mission. Then, the conditions of Space geography imply the data volume, the algorithm to deal with data in Space combined with data in the ground segment. Moreover, the Space geographic representation introduces data in the matters information theory with other dimensions. Otherwise, through this representation, the Space geographic territory can be analyzed to detect, to observe an geographic object in deep Space. That's the way where this huge data process considers geospace as a territory itself in which the data sets techniques provide the key factors to analyze and design a Space mission.