



Distributed processing system of heterogeneous data for DEMETER mission

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Large amount of DEMETER data from one side and wide international collaboration from other side provide a basis of implementation of distributed processing systems in the project. One of such system was designed to separate small-value effects in the data from the background noise. It must be denoted that to reach these goals special data processing methods must be used. One of the most efficient algorithms to search phenomena, which property is not definitely defined, is an artificial intelligence method (AIM) and such method was used for creation of a dedicated system (AIM-D). The software system based on On-Line Analytical Processing (OLAP) and data mining methods was developed to search possible interrelations between different DEMETER sets of data including spacecraft and respective ground-based measurements. This system is composed of AIM elements as well as classic method for data treatment. The key feature of the system is to analyze heterogeneous multidimensional data to investigate phenomena localized in time and space. The system is based on standard industrial software components, which allowed increasing its functionality and scalability. The tools for distributed work including integration with DEMETER Level-3 processing are used in the system.

We present the description of AIM-D system and discuss some results produced by its assistance.