Data processing and distribution in the PAMELA experiment.

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The satellite born experiment PAMELA, aims to measure with great precision the antimatter present in our Galaxy in the form of high energy particles; in the same time it will measure the galactic, solar and trapped components of cosmic rays. It will collect data at a rate of 10-20 GB/day, for an estimated duration of three years. Data are received in the ground station in Moscow, and undergo three main processes: housekeeping monitoring, physical data reconstruction, statistical analysis. These tasks and need to be completed before the subsequent downlink takes place, in order to take actions in short time if need arises. The programming tools used are C++, FORTRAN, PYTHON, Java. SQL is employed for relational databases. A quicklook task allows local and remote users to access the data processed in Moscow; data transfer to the main storage center (CNAF in Italy) and subsequent analysis is performed using GRID technologies: the experiment is currently executed as a Virtual Organization) to improve computing and data mining performance. In this work we will describe the on ground data flow of the experiment from downlink to data analysis.