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The Dark Energy Survey Data Management System

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The Dark Energy Survey (DES) is a project with the goal of building, installing and exploiting a new 70 CCD-camera at the Blanco telescope, in order to study the nature of cosmic acceleration. It will cover 5000 square degrees of the southern hemisphere sky and will record the positions and shapes of 300 million galaxies up to redshift 1.4. The survey will be completed using 525 nights during a 5-year period starting in 2012. About O(1 TB) of raw data will be produced every night, including science and calibration images. The DES data management system has been developed for the processing, calibration and archiving of these data. It is being developed by collaborating DES institutions, led by NCSA. In this contribution, we detail how a high performance computing environment is the best choice for this task, what kind of scientific codes are involved and how the Data Challenge process works, to improve simultaneously the Data Management system algorithms and the Science Working Group analysis codes.

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