In this contribution we would like to stress data calibration, observing and data reduction procedures to help prospective users in understanding all the steps necessary for acquiring good data. A complete step-by-step data calibration, object observation and data reduction sequence is presented. We also discuss in some detail the core of the software, which is based on deconvolution of Gaussians to allow for the decontamination of fibers by their neighbors.

PAINEL 176

PRODUCING COSMIC MICROWAVE BACKGROUND RADIATION ANISOTROPY MAPS USING A GENETIC ALGORITHM: PERFORMANCE AND RESULTS

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Anisotropy maps supply the angular distribution of the temperature of the Cosmic Microwave Background Radiation (CMB).The aim of this work is to study the feasibility of applying genetic algorithms to the production of CMB anisotropy maps. Genetic algorithms are techniques of search and optimization inspired in the principles of the natural selection. The main characteristics of these algorithms are variable encoding, intrinsic data parallel processing and random search operators. A specific genetic algorithm was developed and applied to several simulated time-ordered data sets to generate CMB maps. The time-ordered data is a set of temperature differences from distinct regions in the sky. This work presents maps generated by a genetic algorithm, as well as estimates of its performance to produce CMB maps. The required CPU time to obtain a map is proportional to a power law of an arbitrary precision. The RAM memory requirement is proportional to the number of pixels map in the map. The coefficient of correlation was used to compare the genetic algorithm and a traditional method for CMB map making technique. This work was supported by CAPES.

PAINEL 177

IMAGING SPECTROPOLARIMETRY WITH THE LNA IFU SPECTROGRAPH

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We have employed a polarimetric module with the Integral Field Unit (IFU) Eucalyptus spectrograph of the LNA Observatory with the goal of providing a facility imaging spectropolarimeter. The module contains a rotating achromatic halfwave plate and a double calcite prism. This arrangement provides two perpendicularly polarized images of a non-extended source that are imaged on the IFU. The method allows for the effect of different fiber sensitivity and it can be used in non-photometric nights. Data of polarized and unpolarized standard stars have been gathered in order to ascertain the spectropolarimeter performance. Our preliminary results and the limiting polarimetric accuracy of the setup will be presented. FAPESP, CAPES and CNPq support this research.

PAINEL 178

THE NUMERICAL MECHANICAL TEST-FACILITY FOR THE SCHENBERG DETECTOR

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The GRAVITON group is building the first Brazilian gravitational wave prototype detector. This detector, named MARIO SCHENBERG, will have the following characteristics: a) geometry: spherical; b) mass: 1.15 ton; c) diameter: 65 cm; d) mechanical Q: about 20 million. The detector will be sensitive in the range of frequency 3100-3300 Hz. In this work, the vibrational isolation system, the thermal link and the transducer mechanical structure were conceived and analysed by numerical techniques. To the numerical analyses, the conceived systems were represented by finite element models and the corresponding dynamical equations were solved using the Msc/Nastran software. In order to study the overall system behavior and the noise influence over the detector, we performed the integration of the numerical models for the several mechanical systems (vibrational isolation system, thermal link, transducers and the resonant mass). The integrated numerical analysis showed that we can expect a 280 dB