

Testing the efficiency of the ABS method in separating the CMB from foregrounds

Larissa Santos
University of Science and Technology of China
China

One of the main goals of modern cosmology is to probe inflationary theories by looking on the imprint of primordial gravitational waves in the cosmic microwave background (CMB) polarization field. Future CMB experiments face the great challenge to search for this primordial B-mode signal. The CMB sky is however also filled with secondary B-modes, including CMB lensing and astrophysical foregrounds. Extracting the CMB B-mode polarization from astrophysical contaminations is a primordial task towards detection of the primordial signal. First of all, we must account for the Galactic emission that must be excluded from the data, which leads to an extra contamination in the form of a leakage between E-modes and B-modes. We use the analytical method of blind separation (ABS) proposed by Zhang, P., et al. (2017) to reconstruct mainly the CMB B-mode power spectrum in the presence of foregrounds and white noise considering a partial sky analysis.