

Seminarium Astrofizyczne

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Studies on systematic errors in the reconstruction of the cosmic microwave background lensing potential

The effect of gravitational lensing of the cosmic microwave background (CMB) provides a unique opportunity to probe of the gravitational potential of the large-scale structure of the Universe at very high redshifts. Tomographic cross-correlation of the gravitational potential with other tracers of the large-scale structure at known redshifts allows tracing the evolution of the structure and testing cosmological models. On the other hand, the CMB lensing effect also produces a divergence-free component of the CMB polarisation, which can be a serious obstacle for the detection of signal coming from primordial gravitational waves generated during the inflationary epoch. To be able to detect the latter, there is a need of very accurate measurement of the lensing effect and correction of CMB polarisation maps for this effect. In this talk I will present studies on the impact of photometric redshift errors on the reconstruction of the CMB lensing potential and the correction of the CMB maps for the lensing effect. I will also discuss possible approaches to mitigate the errors.

Serdecznie zapraszam,
William Pearson, on behalf of the SOC