Contribution ID: **65** Type: **not specified**

Unified correction of the EB-leakage from masking and TOD filtering.

Thursday, 3 December 2020 11:10 (25 minutes)

In a ground-based CMB experiment, the detection is contaminated by the atmosphere and ground emissions, and there are also temperature-to-polarization leakages. Thus, the time-ordered data (TOD) need to be filtered to reduce those contaminations. However, the filtering will inevitably remove some CMB signals and distort the rest. Especially, it causes additional E-to-B leakage and B-mode suppression that hinder the CMB B-mode detection. In this talk, I will divide the TOD filtering into several kinds from the simplest case to the general case, and show how to solve the E-to-B leakage problem in each case. The solution will include not only the E-to-B leakage but also the B-mode suppression corrections and will satisfy the minimum variance condition. Moreover, the solution works not only for the TOD filtering but also for any linear filtering in the pixel domain.

Presenter: Dr LIU, Hao (Anhui University)

Session Classification: 12. method: analysis 4