

## 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.

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**Session Classification:** 12. method: analysis 4