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Subaru Hyper Suprime-Cam Year 3 Cosmology Results: S8 tension?

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We used more than 25 million galaxies in the Subaru Hyper Suprime-Cam (HSC) shear catalog in the redshift range up to z~1.5 to measure weak lensing distortion effects due to large-scale structures. We used the measured weak lensing signals to perform a blinded cosmology analysis to measure the cosmological parameters of the flat LambdaCDM model. To obtain a robust constraint on the cosmological parameters, we employed a uninformative flat prior to model a possible residual systematic error in the mean redshift for HSC galaxies at z>1. As a result, we were able to measure the "S8" parameter at a 4% accuracy (sigma(S8)~0.04), but the central value exhibits about 2.5sigma tension with the Planck inferred S8 value. Our results indicate a non-zero residual error in the mean source redshift compared to the photometric redshift estimates for the HSC galaxies at z>1. In this talk, I will discuss the HSC cosmology results, and, if time is allowed, present the current status of the upcoming Subaru Prime Focus Spectrograph project, which promises significantly improvement of the HSC cosmology results.

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