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Constraining primordial non-gaussianity in the WebSky2.0 line-intensity mock maps

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Upcoming LIM surveys require extensive modelling to effectively separate faint signals from foregrounds. The WebSky mock maps are one such model, consisting of simulated sky maps that are statistically analogous to LIM observations. WebSky maps have been used extensively to study the cosmic microwave background (CMB), and the new WebSky2.0 simulations deliver the resolution and modelling updates to make mock maps for upcoming LIM observatories that will deliver new insights into cosmology. WebSky2.0 mocks are fast and efficient and can be generated for universes with beyond-the-standard-model cosmologies such as primordial non-Gaussianity (PNG), allowing us to directly test theoretical cosmology against observational LIM data. Of particular interest are primordial intermittent non-gaussianities (PINGs), a general class of non-Gaussianity that is produced in multi-field inflation models and may not be easily observed using conventional tests of PNG. We demonstrate that PINGs can be constrained using the WebSky2.0 LIM mocks for the CCAT and COMAP observatories, and propose PINGs as a potential science case for upcoming LIM surveys.

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