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Multi-field inflation with large scalar fluctuations: non-Gaussianity and perturbativity

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Recently multi-field inflation models that can produce large scalar fluctuations on small scales have drawn a lot of attention, primarily because they could lead to primordial black hole production and generation of large second-order gravitational waves. In this talk, we focus on models where the scalar fields responsible for inflation live on a hyperbolic field space, and present new results for scalar non-Gaussianity. On scales around the peak, we typically find that the non-Gaussianity is large and close to local in form. We discuss implications of our results for the perturbativity of the underlying theory, focusing in particular on versions of these models with potentially relevant phenomenology at interferometer scales.

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