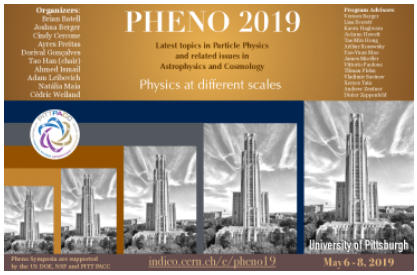

Contribution ID: **734** Type: **parallel talk**

Supersymmetric Inflation from the Fifth Dimension

Tuesday 7 May 2019 15:45 (15 minutes)

This talk will present a SUSY bi-axion model of high-scale inflation, in which the axionic/inflationary structure originates from gauge symmetry in an extra dimension. We show that local SUSY, although necessarily Higgsed during inflation, can naturally survive down to the $\sim$ TeV scale in order to resolve the electroweak hierarchy problem. This model presents an interesting interplay of tuning considerations relating the electroweak hierarchy, cosmological constant and inflationary superpotential, where maximal naturalness favors SUSY breaking near the electroweak scale after inflation. The scalar superpartner of the inflaton, the "sinflaton", can naturally have $\sim$ Hubble mass during inflation and sufficiently strong coupling to the inflaton to mediate primordial non-Gaussianities of observable strength in future 21-cm surveys. Non-minimal charged fields under the higher-dimensional gauge symmetry can contribute to periodic modulations in the CMB, within the sensitivity of ongoing measurements.

Summary

Authors: DESHPANDE, Kaustubh (University of Maryland, College Park); SUNDRUM, Raman (University of Maryland)

Presenter: DESHPANDE, Kaustubh (University of Maryland, College Park)

Session Classification: SUSY II