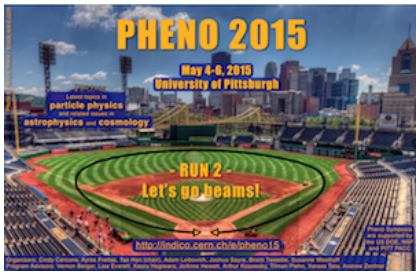

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Natural Inflation and Quantum Gravity

Monday 4 May 2015 14:30 (15 minutes)

Cosmic inflation can readily involve energies close to the scale at which quantum gravity effects become important. General considerations of black hole quantum mechanics suggest nontrivial constraints on any effective field theory model of inflation that emerges as a low-energy limit of quantum gravity, in particular the constraint of the Weak Gravity Conjecture. We show that higher-dimensional gauge and gravitational dynamics can elegantly satisfy these constraints and lead to a viable, theoretically-controlled and predictive class of natural inflation models.

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