Title: Large Tensor-to-Scalar Ratio in Small-Field Inflation

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Abstract: The production of gravitational waves from cosmic inflation > is normally bounded by the inflaton field excursion. This relation, > which is often referred to as the Lyth bound, claims that > observationally large gravitational waves are produced only if the > inflaton has a super-Planckian field range. In this talk I will point > out that this general belief is not necessarily true when there are > additional light fields producing density perturbations. Perturbations > seeded by the inflaton can be suppressed under such situations, thus > allow large gravitational waves to be produced even from small-field (i.e. > sub-Planckian) inflation. I will also show that the field bound is > taken over by the light field when the inflaton-induced perturbations > are suppressed, thus present a generalized form of the Lyth bound that > applies to the total field space. The calculations are rather simple, > so I will explain my work on a blackboard.



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in Small-Field Inslation $\Delta \varphi = \left| \frac{\varphi}{H} \right| H \Delta t$ ~ Jr Mp N . 2

\$2 Suppressing P3 from Sp





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