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Primordial Gravitational Waves and the Swampland

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The swampland conjectures seek to distinguish effective field theories which can be consistently embedded in a theory of quantum gravity from those which can not (and are hence referred to as being in the swampland). We consider two such conjectures, known as the Swampland Distance and de Sitter Conjectures, showing that taken together they place bounds on the amplitude of primordial gravitational waves generated during single field slow-roll inflation. The bounds depend on two parameters which for reasonable estimates restrict the tensor-to-scalar ratio to be within reach of future surveys.

Summary

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