

Abstract Submitted  
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**String-inspired Infinite Derivative theories of Gravity**<sup>1</sup> TIRTHABIR BISWAS, Loyola University, New Orleans, ANUPAM MAZUMDAR, Lancaster University, UK — In String Theory there often appears a rather interesting class of higher derivative theories containing an infinite set of derivatives in the form of an exponential. These theories may provide a way to tame ultra-violet divergences without introducing ghost-like states. In this talk we provide a brief overview on the progress that has been made over the last decade to construct such infinite derivative theories of gravity. We will mostly focus on the status of the classical singularities, viz. Big Bang and the Black hole singularities, but we will also briefly discuss the recent progress that has been made on understanding quantum aspects of such infinite derivative theories. In the process we will present some general results that can be applied to any covariant torsion-free metric theory of gravity.

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Tirthabir Biswas  
Loyola University, New Orleans

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