

Title: Panel Discussion II: Do we need Quantum Gravity to crack the Big Bang? What about inflation? fact or fiction?

Speakers:

Collection: Quantum Spacetime in the Cosmos: From Conception to Reality

Date: May 09, 2023 - 4:00 PM

URL: <https://pirsa.org/23050119>

Abstract: Zoom Link: <https://ptp.zoom.us/j/95721802052?pwd=TE1iTGxGLzNqeTFSZlNGRXRYMHBCZz09>

Inflation  $\rightarrow$  Amplifies QG (trans-planckian)  
 $\rightarrow$  attractor  
 $\rightarrow$  not  
novel tests of QG?  $M_{\text{pl}} \leq 2 M_{\text{ot}}$ ?  
 $\rightarrow$  Traces of pre-inflation? hard

Inflation an EFT?  
Can statistics tell us about the vacuum  
Nature of initial condition?  
 $\rightarrow$  yes tests of gaussianity  
Final theory  $\rightarrow$  Evolution of theories?  
QG  $\neq$  Unification  $\neq$  Consistency  
Phobia of finality?

- Is goal of physics finding a final theory?  
- Love singularities?  
Singularities are evil?  
- Gravity does not entangle?  
classical?  
- Real numbers cannot be real!

