

# JOINT TUFTS/MIT COSMOLOGY SEMINAR

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*The simplicity of two dimensional nearly  
AdS<sub>2</sub> or dS<sub>2</sub> gravity and its connection to  
four dimensional physics.*

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IAS

After reviewing how certain black holes develop AdS<sub>2</sub> or dS<sub>2</sub> regions, we will describe some observables that are dominated by physics in these regions. Quantum gravity effects become relatively simple and calculable in this regime. We will describe various applications from wormholes to the computation of the Hartle-Hawking wave function for certain non-trivial topologies.

**Tuesday, February 26, 2019, 2:30 pm**  
**Cosman Seminar Room**  
**Center for Theoretical Physics**  
**Building 6C, Room 6C-442**  
**Massachusetts Institute of Technology**  
Refreshments at 2:00 in the same room