

- **The singularity problem, bouncing universes, and the CMB**
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Bouncing Cosmology provides a way to match the current state of observational cosmology, while avoiding the Singularity Problem of Standard Big Bang cosmology. By extending time backwards to include a slow contracting phase, we replace the big bang by a bounce; which can be mediated using new physics, to avoid the singularity altogether. In this talk, I review attempts at constructing bouncing universes, and how these are affected by the latest observational limits from PLANCK. I will come to focus on new models using galileon-like matter, and demonstrate that a non-singular bouncing universe is in agreement with the current state of observation. We finish with an outline for how future observation may distinguish between inflationary and bouncing scenarios.