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国台学术报告 NAOC COLLOQUIUM

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Time: Thursday 8:00 PM, Jan.14th

Location: Online via Zoom (Meeting ID: 371 980 4633 / PW: 2021)

The Hubble Tension and the Magnetic Universe

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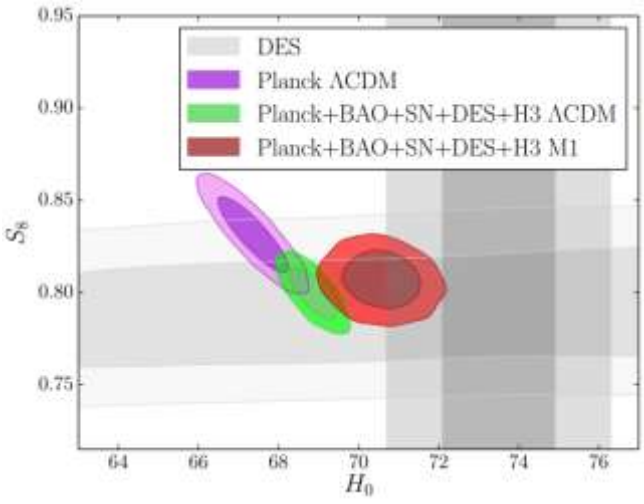
Levon Pogosian received his PhD from Case Western Reserve University in Cleveland, Ohio, and was a research fellow at Imperial College London, Tufts University and Syracuse University before taking on a faculty position at Simon Fraser University, where he is now Professor of Physics. He is a theoretical cosmologist using the observable universe as a laboratory for testing the laws of Nature. He is particularly interested in dark energy and modified gravity, cosmic magnetic fields, cosmic strings and other relics of the Big Bang.

Abstract



The standard cosmological model determined from the accurate cosmic microwave background measurements made by the Planck satellite implies a value of the Hubble constant H0 that is 4.2 standard deviations lower than the one determined from Type Ia supernovae by the SH0ES collaboration. We have found that accounting for the enhanced recombination rate due to the additional inhomogeneities in the baryon density induced by primordial magnetic fields can help to reconcile these two measurements. Intriguingly, the strength of the magnetic field required to solve the Hubble tension is of the right order of magnitude to also explain the observed galactic, cluster and intergalactic fields. Our results motivate further detailed studies of primordial magnetic fields, setting several well-defined targets for future observations.

All are welcome !