Stanford

Suchetha Cooray

Postdoctoral Scholar, Physics

Bio

BIO

Suchetha Cooray is a KIPAC Postdoctoral Fellow at Stanford University. His research operates at the intersection of observational data, galaxy formation physics, cosmological theory, and artificial intelligence.

Suchetha is broadly interested in decoding the "cosmic ecosystems" that drive galaxy growth and evolution. His work seeks to reveal the complete lifecycle of galaxies—tracing their origins from density peaks of dark matter, through the complex interaction of their baryonic components, to their eventual cessation of star formation. Galaxy formation presents a profound computational challenge, as physical processes span at least 14 orders of magnitude, from the sub-parsec scales of black hole accretion disks to the vast web of cosmic large-scale structure.

To navigate this complexity, Suchetha employs numerical simulations and machine learning to build statistically robust models of the Universe, connecting the first galaxies revealed by JWST to the mature populations of the present day. As the field enters a transformative decade for precision cosmology, his research focuses on maximizing the scientific insights from upcoming major surveys—including PFS, Euclid, Rubin LSST, SPHEREx, and Roman.

Previously, Suchetha was a JSPS Postdoctoral Fellow at the National Astronomical Observatory of Japan and earned his doctorate at Nagoya University.

STANFORD ADVISORS

- Risa Wechsler, Postdoctoral Faculty Sponsor

LINKS

- https://suchethacooray.com: https://suchethacooray.com