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Astrophysical Signatures of Gravothermal Collapse in Dark Matter Halos

Wednesday 10 September 2025 11:40 (40 minutes)

I will present recent high-resolution N-body simulations of self-interacting dark matter (SIDM) and discuss their implications across a broad range of astrophysical observations. In particular, I will highlight novel signatures arising from gravothermal collapse in dark matter halos. I will then explore the prospects for detecting these signatures in strong gravitational lensing systems, stellar streams, dwarf galaxies, and the formation of supermassive black holes. Together, these studies open promising new avenues for probing the fundamental nature of dark matter.

References

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Presenter: YU, Hai-Bo (University of California Riverside)

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