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## Axion Constraints from Evolution and Dynamical Mass Determination of Cepheids

Axions are favored as a possible dark matter candidate. They can be produced in large quantities in stellar environments and have non-trivial effects on stellar evolution. Cepheid variables are particularly sensitive to axion production: the Cepheid blue loop stages can be eliminated if the axion coupling to Standard Model particles is strong enough and axions are produced copiously. This has implications for the Cepheid mass discrepancy problem, which is the 10-20% discrepancy between the determination of a Cepheid's mass from pulsation models compared to evolutionary models. We probe constraints on the axion coupling coming from the elimination of the blue loop stages and from the mass discrepancy problem. We carefully treat astrophysical uncertainties in our work such as stellar rotation, convective overshoot, and composition.

## Mini Symposia (Invited Talks Only)

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