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Forbidden Conformal Dark Matter at a GeV

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We introduce a model of dark matter (DM) where the DM is a composite of a spontaneously broken conformal field theory. We find that if the DM relic abundance is determined by freeze-out of annihilations to dilatons, where the dilatons are heavier than the DM, then the model is compatible with theoretical and experimental constraints for DM masses in the 0.1-10 GeV range. The conformal phase transition is supercooled and strongly first-order, and can thus source large stochastic gravitational wave signals consistent with those recently observed at NANOGrav. Future experiments are projected to probe a majority of the viable parameter space in our model.

Mini Symposia (Invited Talks Only)

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