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Modeling Axion Structure Formation with N-Body Codes for ADMX[1] ERIK LENTZ, Univeristy of Washington, ADMX COLLABORATION — Axions are a well-motivated candidate for the dark matter. Direct axion search experiments, like the Axion Dark-Matter Experiment (ADMX), can resolve the local axion-halo velocity to better than $\sim 10^{-5}c$. However, there isnt an agreed-upon model of axion structure formation. Hence, there is some uncertainty as to whether structures seeded by axion dark matter form differently than structures seeded by standard pressureless cold dark matter. This talk proposes an alternative model and outlines a plan to simulate its axion structures by leveraging ChaNGa, a powerful N-body structure-formation code.

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