

Abstract Submitted  
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**Identifying Symmetries via Machine Learning** RASHI VERMA,  
Boston Univ — Nucleation is the non-equilibrium process by which a metastable phase transforms to a stable one. For example, in liquid-to-solid nucleation, fluctuations in a supercooled liquid eventually give rise to nucleating droplets, which may continue to grow to the stable crystalline phase. Surprisingly, the nucleating droplets often exhibit atomic symmetries very different than that of the stable phase. Here, we develop a fundamentally new way to think about the nucleation process, and to study precursor fluctuations that may exist in the metastable phase.

Rashi Verma  
Boston Univ

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