## **Crystallization of Water: a Molecular Perspective**

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The formation of ice is one of the most common phase transitions in Earth's atmosphere. Nevertheless, little is known about the microscopic pathway that leads to the crystallization of water and the role surfaces and molecules have on the reaction coordinate and barrier of ice nucleation. In this presentation I will discuss our approach to modeling ice nucleation with coarse-grained models and the main insights we obtained on the nature of the reaction coordinate, the relation between the sharp but continuous structural transformation of water on its limit of supercooling, and the role of stacking disorder on the nucleation barrier.