
The role of an ice surface's structure in determining the orientation and subsequent reactivity of adsorbed small molecules.

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Abstract

The chemistry occurring on the surface of an ice-covered dust grain plays a key role in modifying the composition of both the solid and gas phases in astrophysical environments. This presentation will discuss the role of the structure of the ice surface in both physical (adsorption/desorption) and chemical (reaction) processes. In the first part, the structure of the amorphous solid water surface, and its reorganisation upon thermally- or photon-driven processing, will be discussed. Secondly, the interaction of polycyclic aromatic hydrocarbons with water clusters and ices will be used as an illustration of the critical role played by molecular orientation in chemical reactivity.

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