Abstract Submitted
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Sticking coefficients of Molecular Hydrogen on Amorphous Ice using Molecular Dynamics Simulations[1] VIJAY VEERAGHATTAM, STEVEN LEWIS, PHILLIP STANCIL, University of Georgia, JUNKO TAKAHASHI, Meiji Gakuin Univeristy, Japan — The Molecular Dynamics (MD) method was employed to model hydrogen molecules interacting on the surface of amorphous ice and the sticking coefficients of H_2 were calculated. Interstellar dust grains are mostly composed of carbon or silicate grains with layers of amorphous ice on their surface. Interaction of molecular hydrogen with these grain surfaces is of astrophysical importance as the gas-grain interactions play a pivotal role in the chemical evolution of the universe. Our model implements the various dynamical processes that occur during the interaction of the H_2 molecules on the amorphous ice surface, including the random angle striking of H_2 on the surface, scattering of H_2, and sticking of H_2 to the surface. The temperature of the dust grains (T_D) and H_2 molecules (T_{H_2}) play an important role in the surface interactions and in the sticking process. We studied the sticking coefficients as a function of temperature distribution of T_D and T_{H_2}.

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