

First Spectroscopic Evidence for Molecular HCl on a Liquid Surface with Sum Frequency Generation

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Sum frequency generation spectroscopy has been used to obtain the vibrational spectrum of HCl on the surface of a liquid. HCl was studied on the surface of 96 wt % H₂SO₄, 12 M HCl solution, liquid HCl and glass, of which only liquid HCl produces a resonant signal. Implications for the form of HCl on surfaces and the reactions in the atmosphere are discussed.