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1400 – 1900 GHz Local Oscillators for the Herschel Space Observatory

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Abstract

JPL continues its ongoing effort to develop robust planar, all solid-state sources to cover the 1400 to 1900 GHz band. These sources will be used as local oscillators to drive hot electron bolometer (HEB) heterodyne mixers on the Herschel Space Observatory to observe spectra in the interstellar medium such as the N⁺ and C⁺ fine structure lines at 1461 and 1901 GHz, water lines at 1661, 1670, and 1717 GHz, and OH lines from 1834 to 1838 GHz. We report our current progress and present recent results. Preliminary results include a room temperature measurement of 500 nW output power at 1800 GHz.