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Title:Heterodyne Detection of Intracavity Generated Terahertz Radiation
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Abstract:Heterodyne detection is used to characterize the terahertz (THz) emission of a novel room-temperature continuous wave source based on difference frequency generation within the cavity of a dual-color vertical external cavity surface emitting laser. Employing the high intracavity intensities allows for the generation of mW powers in a wide frequency range within the terahertz spectrum. Experimental results of heterodyne detection are presented for the emission frequencies of 820 GHz and 1.9 THz using Schottky and hot electron bolometer mixers. Simultaneous emission of multiple narrow-line THz frequency components is observed.
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Inspec controlled terms:bolometers - heterodyne detection - laser cavity resonators - optical frequency conversion - surface emitting lasers - terahertz wave generation
Uncontrolled terms:terahertz radiation heterodyne detection - intracavity generated terahertz radiation - THz emission - room temperature continuous wave source - difference frequency generation - dual color laser - vertical external cavity surface emitting laser - Schottky bolometer mixers - hot electron bolometer mixers - frequency 820 GHz - frequency 1.9 THz
Inspec classification codes:A4265K Optical harmonic generation, frequency conversion, parametric oscillation and amplification - A4255P Lasing action in semiconductors - A4260D Laser resonators and cavities - B4340K Optical harmonic generation, frequency conversion, parametric oscillation and amplification - B4320J Semiconductor lasers - B4320L Laser resonators and cavities
Numerical data indexing:frequency 8.2E+11 Hz;frequency 1.9E+12 Hz
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