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【181】Dispersion measurements of Terahertz Quantum Cascade Fabry-Perot cavities and VECSELs

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A method for obtaining the dispersion of terahertz (THz) quantum cascade lasers (QCL) is presented. Previously shown in the mid-infrared (MIR) range, it involves measuring the relative phase of the center burst (0th order harmonic peak) and first satellite (1st order harmonic peak) from the interferogram of a THz QCL cavity, operated below threshold, emitting inside a Fourier Transform Infrared Spectrometer (FTIR). The electroluminescence spectrum is thus determined by performing Fourier Transform on the acquired signal and the group velocity dispersion can then be calculated. This method is applicable to any QCL –here shown for Fabry-Pérot (FP) ridge laser as well as vertical external-cavity surface-emitting laser (VECSEL) THz metasurface.

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