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SP7: Measurement of Coherent THz Radiation using On-Chip Spectrometer

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A novel on-chip spectrometer based on arrays of Schottky diodes has been developed. Showing promising results in a first experiment at TELBE (operation at room temperature, excellent signal-to-noise ratio up to MHz repetition rates, sufficient spectral filtering), optimized versions have been developed aiming at better frequency resolution and lower crosstalk between the frequency resolved outputs. All elements exhibit a similar linear behavior which is favorable for an easy evaluation of the spectrally resolved data. Charge-dependent spectra have been recorded. The output of the spectrometer chip follows the general spectral shape measured with traditional time-domain spectroscopy even without proper calibration.

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