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Abstract:A team from the Heinrich Hertz Institut (HHI) have created a wavelength selective phase modulation (WSPM) technique that allows the usual mechanical delay stages in a CW THz spectrometer to be replaced with complete fibre-coupled electro-optical phase modulators. The resulting THz spectrometer is compact, has no mechanical wear and is able to modulate the THz phase with high speed up to the GHz range. "The challenge was to find a concept for a wavelength selective phase modulation scheme in combination with a subsequent beat signal generation," said Dennis Stanze, a researcher at HHI. "With our concept, CW THz spectrometers become fast without any drawback in stability and have more functionality than conventional CW THz spectrometers. That will bring CW THz systems from a lab technique with potential applications to real world use."