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New concept for THz based X-ray pulse tomography

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In this contribution a new concept for deriving arrivaltime, pulse duration and potentially also the pulse energy of individual XUV/X-ray pulses is presented. The concept is based on the analysis of THz bursts generated by the XUV/X-ray pulses in a novel type of spintronic THz emitter. Note only the arrivaltime jitter but also the duration of the XUV/X-ray pulses can be derived from single-shot electro-optic measurements of the emitted THz waveforms. The potential of the concept is discussed based on first pilot experiments performed recently at the FERMI FEL.

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