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OPTICAL: a new method for characterizing ultra-broadband isolated attosecond pulses[1] MICHAEL CHINI, STEVE GILBERTSON, SABIH KHAN, ZENGHU CHANG, Kansas State University — So far, the measurement of isolated attosecond pulses has been performed with the FROG-CRAB technique based on attosecond streaking. However, it is only applicable to pulses whose spectral width is much less the center photon energy. We show that the spectral phase of isolated attosecond pulses can instead be measured using spectral interference from laser-dressed photoemission signals, a technique we term OPTICAL (One Photon Transition Interference for Characterizing Attosecond Lasers), and we demonstrate that the technique can characterize broadband, very short attosecond pulses. Unlike streaking-based techniques, it requires only modest dressing laser intensities and is not limited by the attosecond spectrum bandwidth.

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