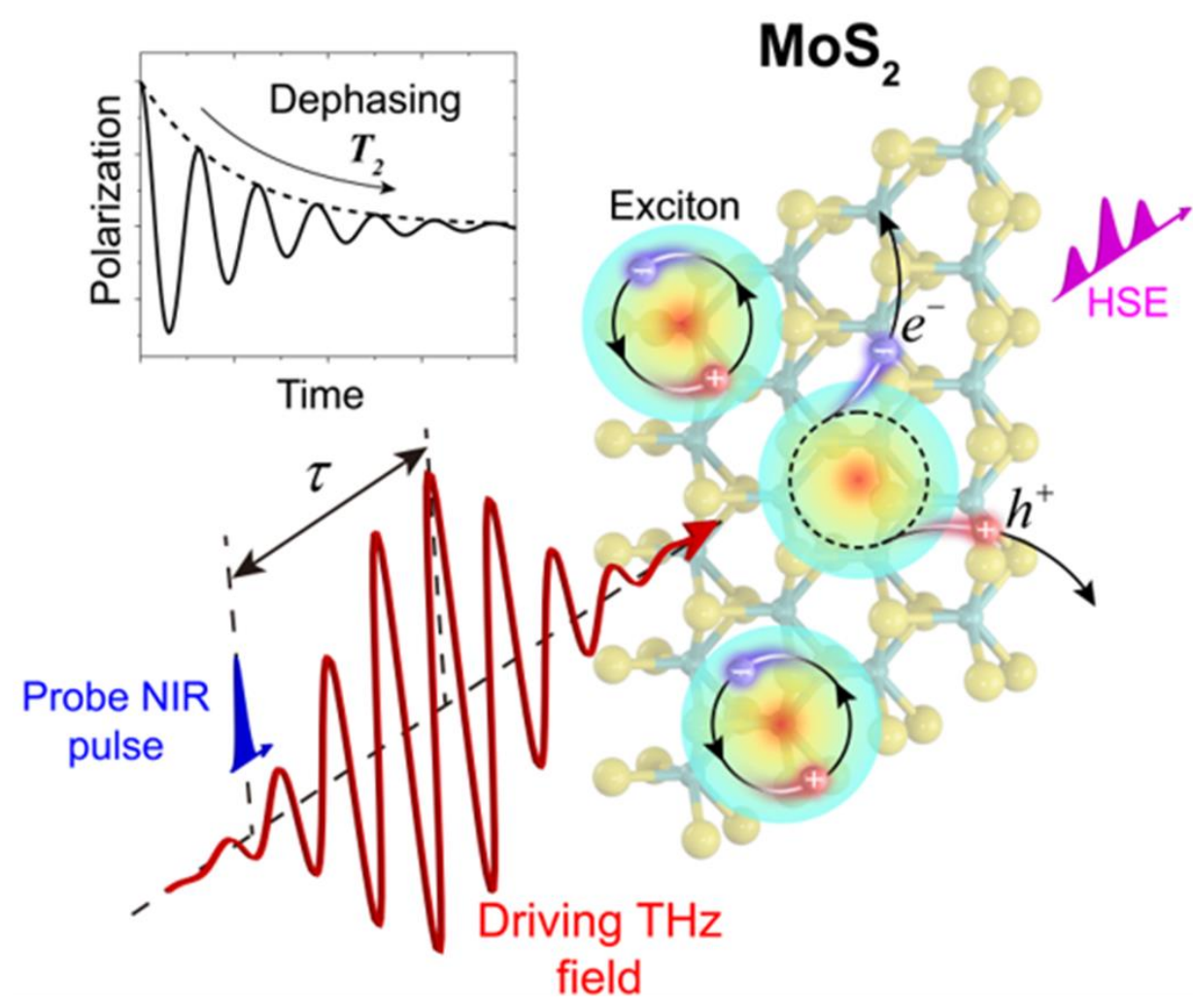
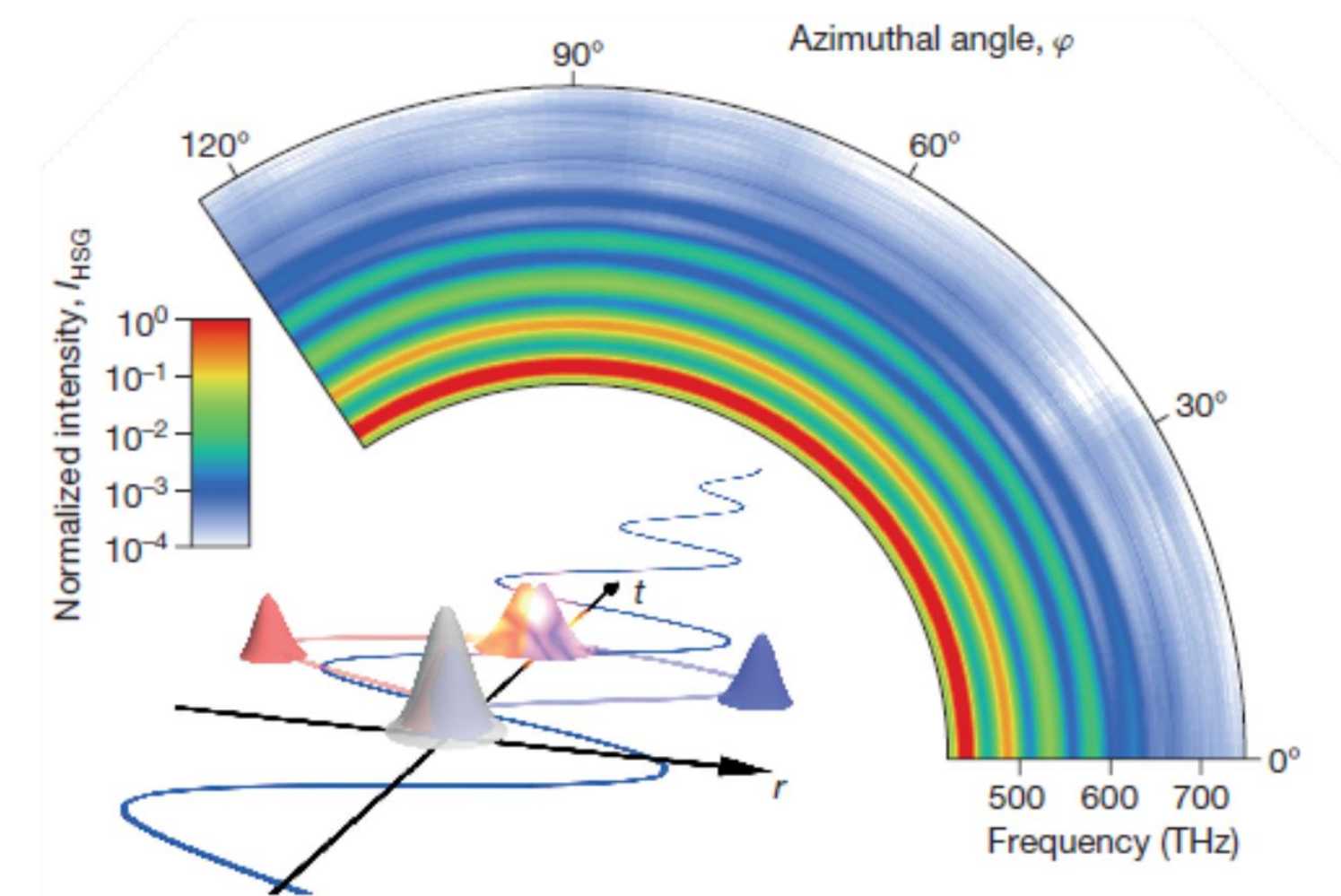
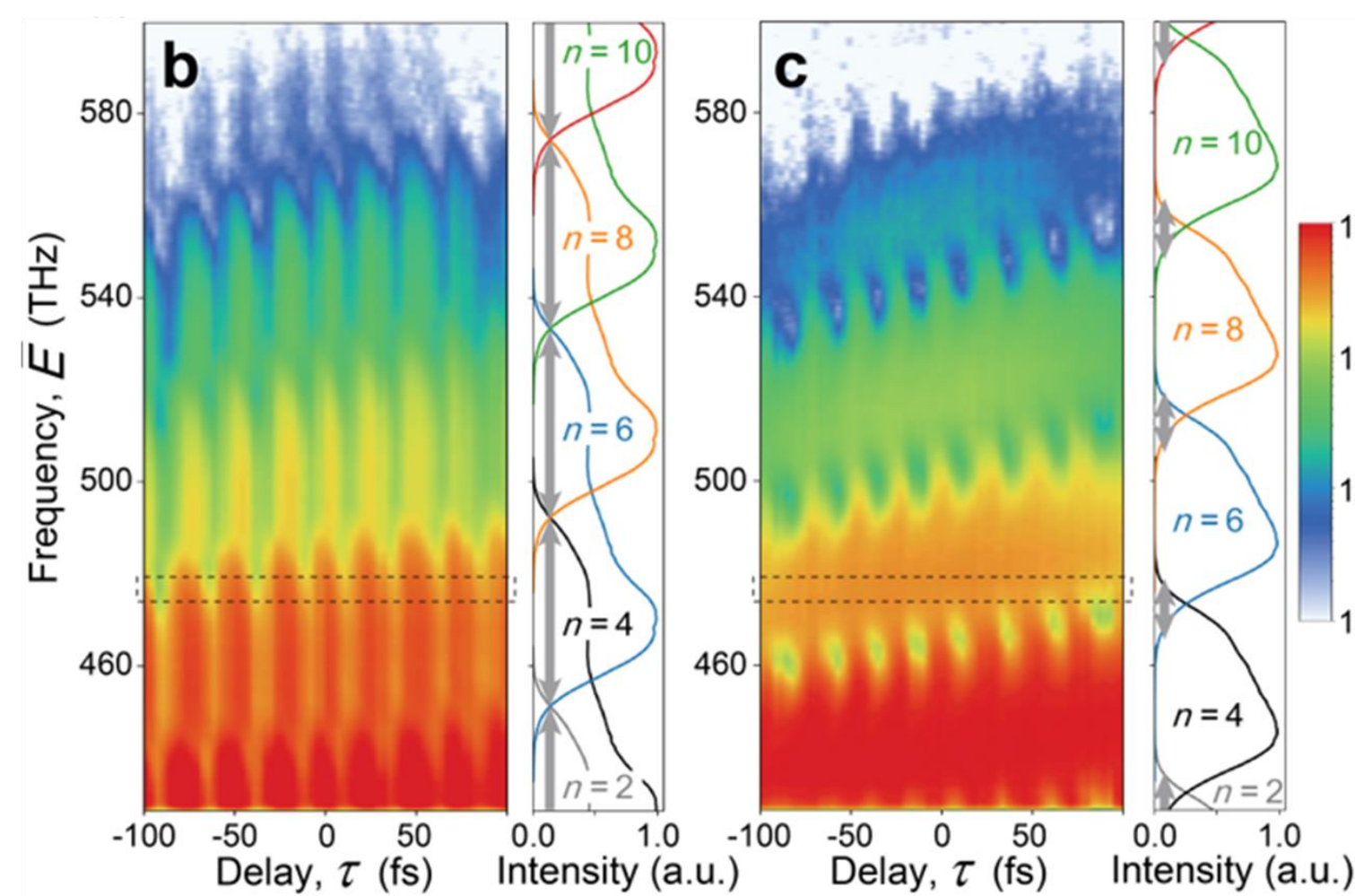


Previous work

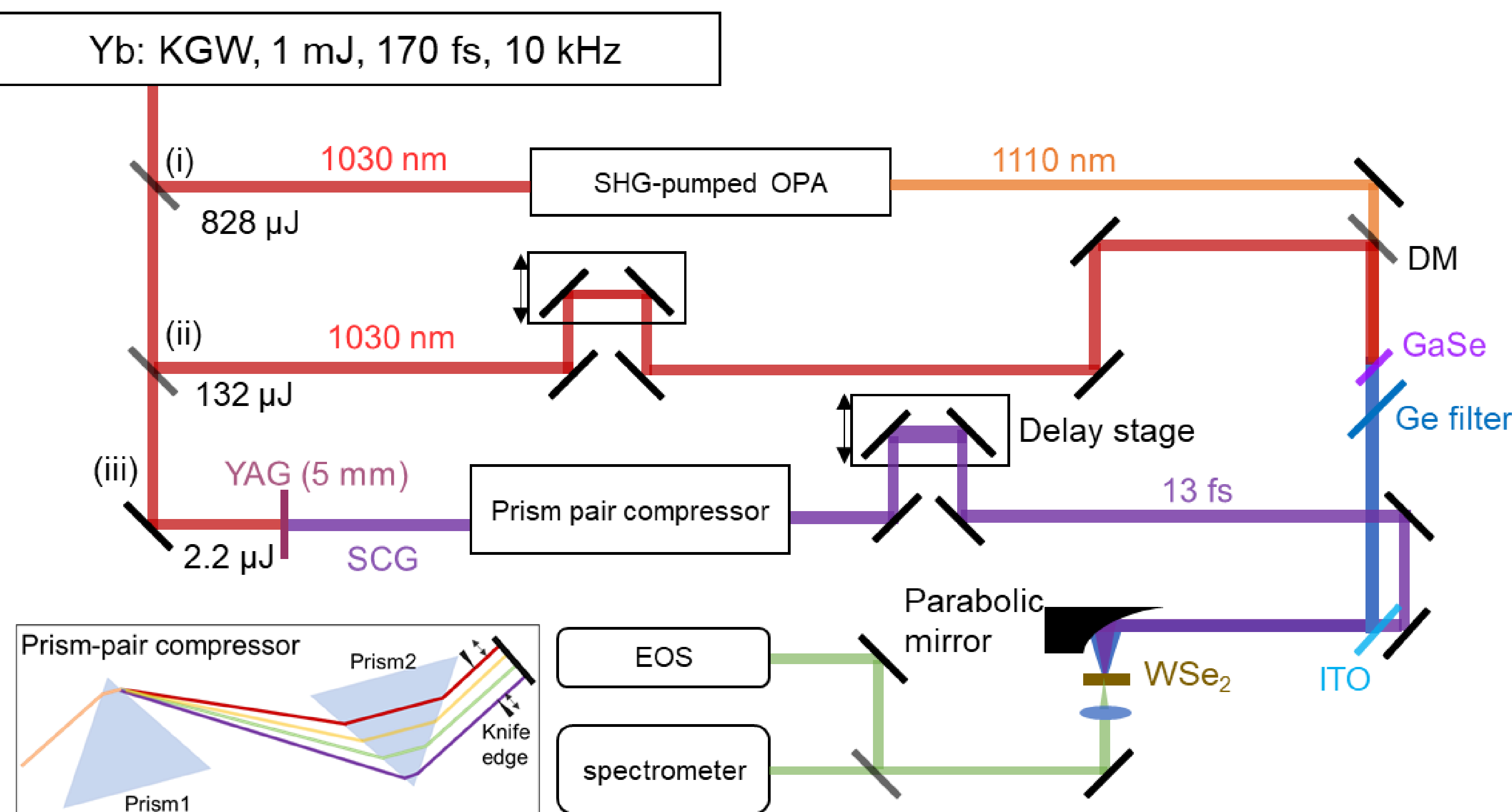


Time- and spectrum-resolved quantum-path interferometry reveals exciton dephasing in MoS₂ under strong-field conditions. (In submission)



Lightwave-driven quasiparticle collisions on a subcycle timescale. Nature 533, 225–229 (2016)

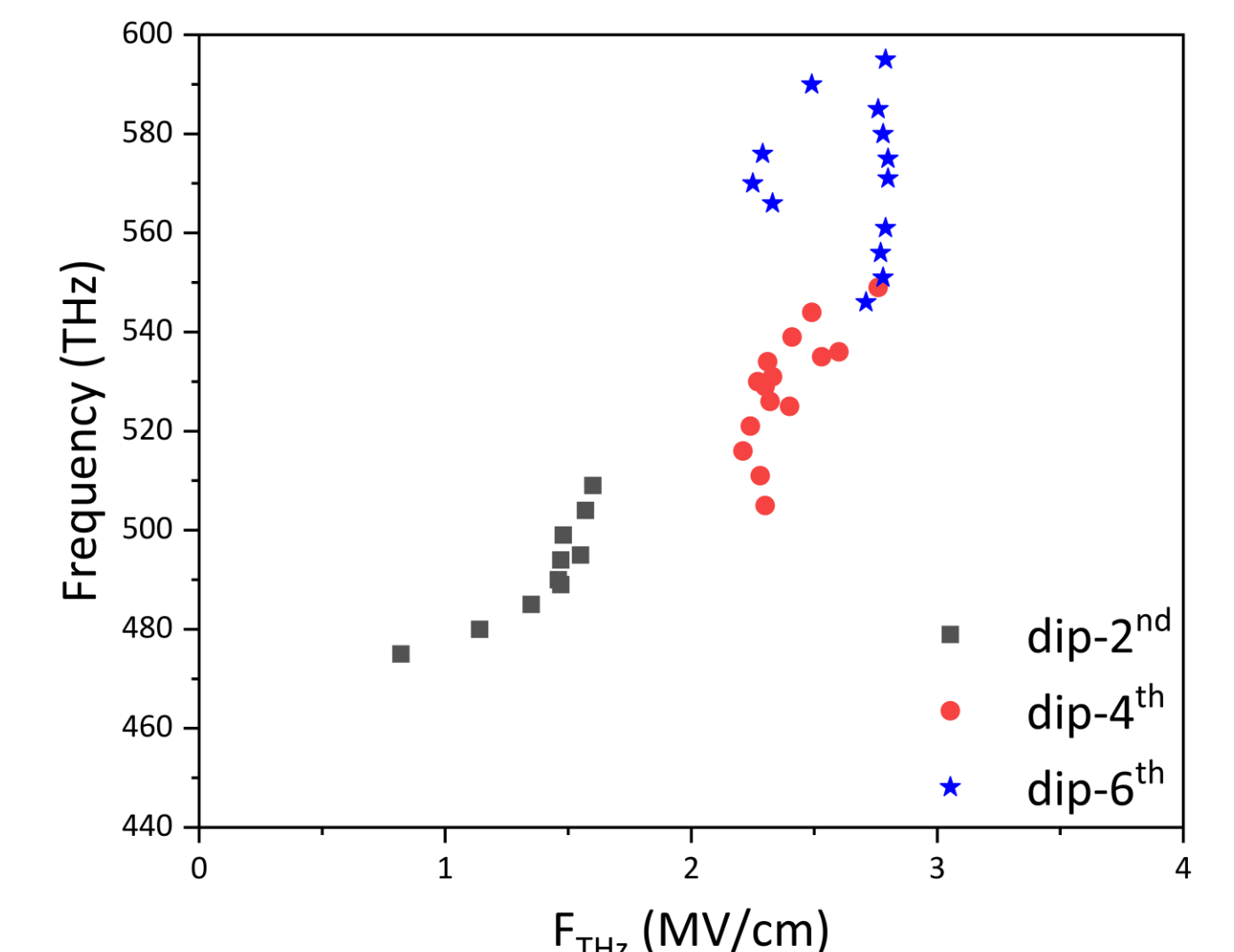
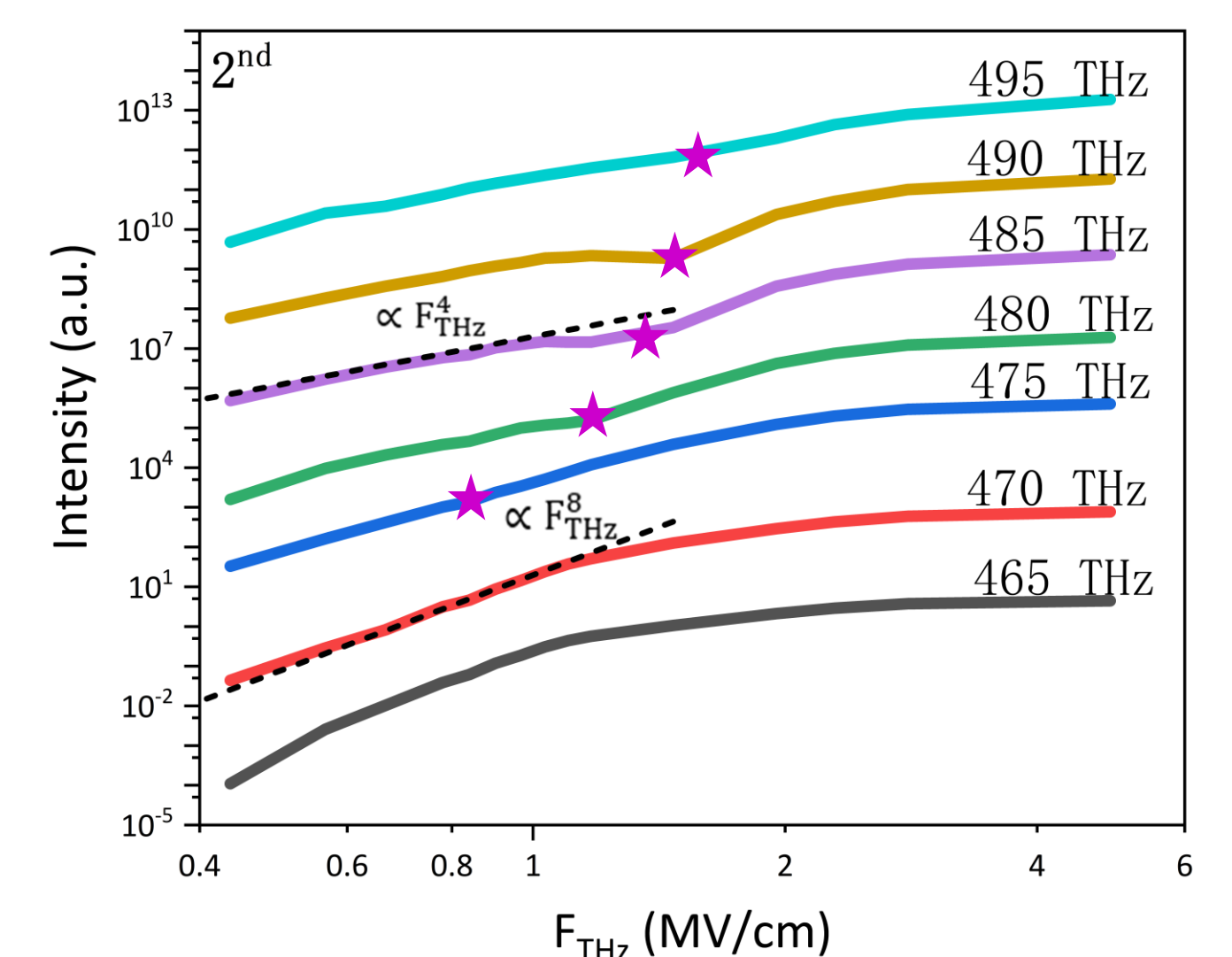
High-order sideband emission



Schematic of the experimental setup.

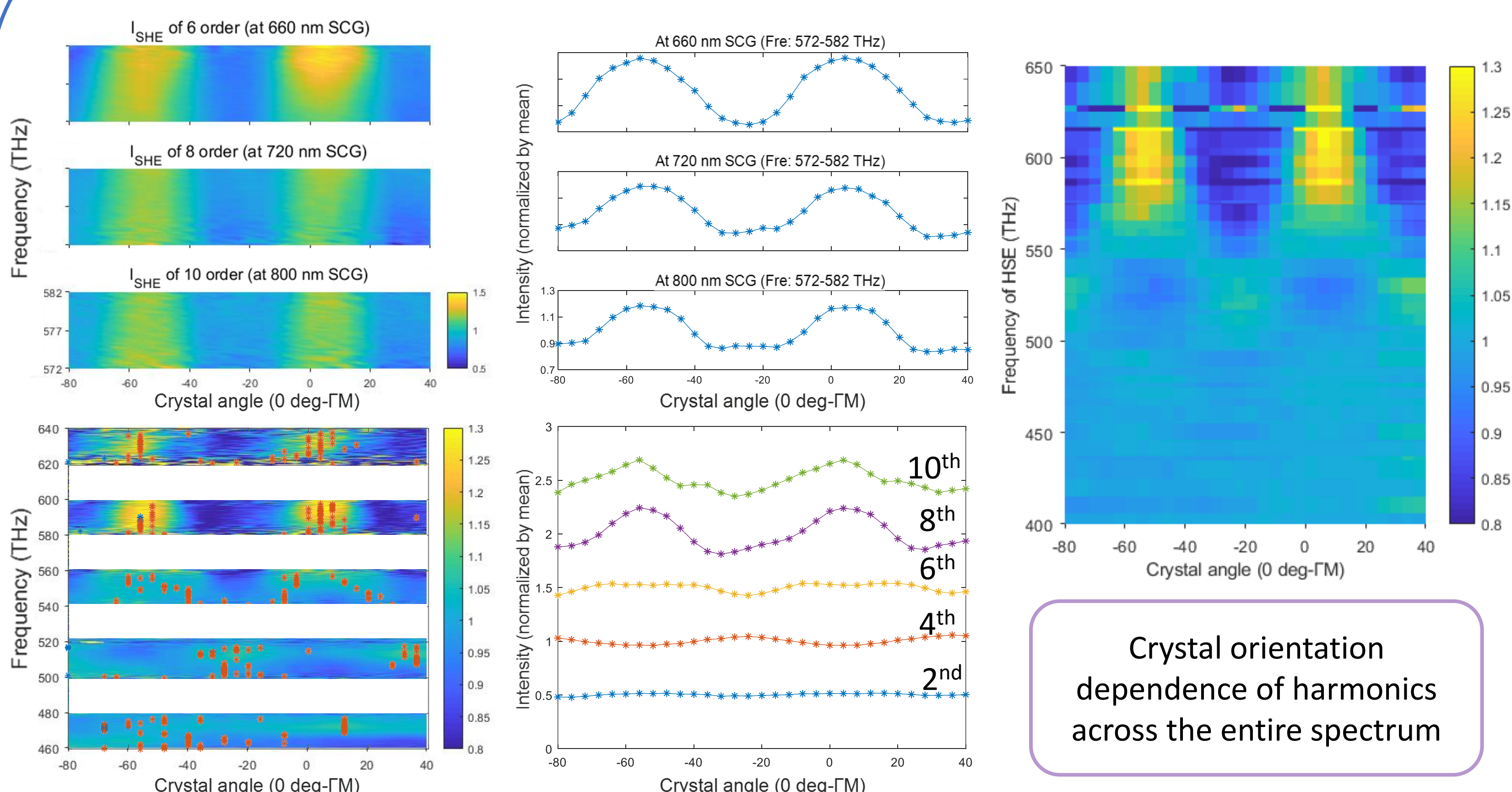
Inset: Schematic of the prism-pair compressor for compressing the SCG beam.

THz intensity variations



Recorded I_{HSE} of 2nd as a function of driving peak field strength F_{THz} . On its dependence curve, there are some peculiar inflection points that correspond to different THz energies at different harmonic frequencies.

Crystal-orientation dependence



Crystal orientation dependence of harmonics across the entire spectrum

The manifestation of harmonics signals at different orders within the same frequency range; The 2 - 10th harmonic signals generated by the excitation light fixed at 700 nm vary with crystal orientation.

Conclusion

1. We constructed an intense multi-cycle terahertz pulse and near-infrared pump-probe system with stable carrier-envelope.
2. The dependence curve of harmonics from WSe₂ material on terahertz intensity exhibits distinct inflection points, suggesting a possible correlation between their frequency-dependent characteristics and the coherence of WSe₂ at different K-points in the band structure.
3. We observed a pronounced crystal orientation dependence on the intensity of harmonics generated at different SCG wavelengths.