Contribution ID: **790** Type: **Invited talk**

Topological plasmonics: Ultrafast vector movies of plasmonic skyrmions on the nanoscale

Wednesday 14 December 2022 16:00 (30 minutes)

Here we introduce a new technique, time-resolved vector microscopy, that enables us to compose entire movies on a sub-femtosecond time scale and a 10 nm scale of the electric field vectors of surface plasmon polaritons. Depending on the shape and geometrical phase, in combination with the helicity of the excitation beam, topological plasmonic quasiparticles are created: skyrmions, merons, as well as quasicrystalline excitations. We observe their complete field vector dynamics at subfemtosecond time resolution.

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Session Classification: Australian and New Zealand Conference on Optics and Photonics

Track Classification: ANZCOP: ANZCOP: Photonic integration and fabrication