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【611】Ultrafast electric Mott transition in GaTa4Se8 following THz photoexcitation

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Mott insulators are archetypal examples of quantum materials. Some Mott insulators exhibit an drop in resistivity under the application of electric fields with durations of ~10 microseconds, with typical threshold fields of a few kV/cm. These electrical Mott transitions are volatile for fields just above threshold but become persistent for higher fields.
Electric fields of 1 MV/cm can be generated with ultrashort THz pulses, enabling the investigation of the sub-picosecond dynamics of the electric Mott transition. THz pulses can also be used to track the Drude conductivity of the material. We will present our results on THz driven dynamics in GaTa4Se8, a Mott insulator which exhibits clear electrical Mott transitions.

Authors: ABREU, Elsa; Dr BABICH, Danylo; JANOD, Etienne; Dr HOUVER, Sarah; Dr CORRAZE, Benoît; Dr CARIO, Laurent; JOHNSON, Steven (ETH Zurich)

Presenter: ABREU, Elsa

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