SFB1242

SFB 1242 Nichtgleichgewichtsdynamik kondensierter Materie in der Zeitdomäne

UNIVERSITÄT DUISBURG ESSEN

Open-Minded

23.10.2018 / 10 Uhr c.t., Raum MG 272
Campus Duisburg

Surface Plasmon Vortices

Prof. Dr. Tim Davis

University of Melbourne

Surface plasmon polaritons (SPPs) are excitations of surface charge that propagate as waves over the surfaces of metals with wavelengths at the sub-micron scale. Under suitable excitation conditions, SPPs can carry orbital angular momentum. The SPPs form a rotating vortex that has been observed experimentally with an optical pump-probe technique coupled with electron microscopy (2PPE-PEEM). This method enables both amplitude and phase information of the surface plasmon wave to be obtained experimentally, allowing us to study the properties of the SPP vortex. The vortex has a phase singularity at its centre where the phase wraps around by integer multiples l of 2π. The integer l is called the topological charge.

The question is: what happens if we try to induce non-integer orbital angular momentum?

In this talk I will discuss the theory of surface plasmon vortices and their properties for both integer and non-integer orbital angular momentum and show some of the results of measurements on them using the 2PPE-PEEM method here at the University of Duisburg-Essen.

Für diese Zeit steht eine Kinderbetreuung nach vorheriger Anmeldung zur Verfügung.

Contact: Prof. Dr. Björn Sothmann, Faculty of Physics
Phone: +49 (203) 37-91578 / Mail: bjoerns@thp.uni-due.de