

## Development of Non-Reciprocal Edge Magnetoplasmon Components

This project focuses on the development and characterization of non-reciprocal microwave components based on edge magnetoplasmons (EMPs) in high-mobility two-dimensional electron systems.

The work will include device design based on simulations and light nanofabrication, followed by low-temperature, high-frequency transport measurements in strong magnetic fields. The student will study the propagation of EMP modes, quantify their non-reciprocal response, and explore their use as on-chip components such as isolators, circulators, or gyrators.

This project offers hands-on training in mesoscopic physics, microwave measurements, cryogenics, and non-reciprocal transport phenomena, and connects fundamental plasmon physics with applications in quantum and classical signal processing. It is ideal for students interested in topological effects, simulations and chiral transport.

For more information contact [dominik.zumbuhl@unibas.ch](mailto:dominik.zumbuhl@unibas.ch) or [aldo.tarascio@unibas.ch](mailto:aldo.tarascio@unibas.ch).

