

Nebraska Center for Materials and Nanoscience
2018 Fall Seminar Series
Co-sponsored with the Dept. of Physics & Astronomy

Carsten Ullrich

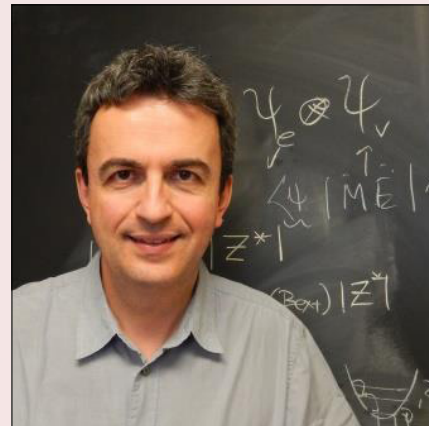
*Professor of Physics
University of Missouri-Columbia*

*Collective spin excitations in chiral
two-dimensional electron systems*

Over the past four decades, itinerant electrons confined in two dimensions have given rise to the discovery of many new quantum effects.

This talk will give an overview of recent theoretical and experimental studies of collective spin excitations in chiral 2D electron systems, which can be realized in n-doped semiconductor quantum wells with Rashba and Dresselhaus spin-orbit coupling.

The interplay between Coulomb many-body effects and spin-orbit coupling is found to provide new ways of controlling the group velocity of the electronic spin waves. A new exact result for interacting 2D electrons, the spin-helix Larmor theorem, is obtained.



Dr. Carsten Ullrich received his M.S. in Physics at State University of New York at Albany in 1990 and Ph.D. in Physics at the University of Wurzburg in Germany in 1995. He has been a Professor of Physics at the University of Missouri-Columbia since 2013.



November 15, 2018 | 4 p.m. | 136 Jorgensen Hall

Refreshments in 1st floor vending area at 3:30

Host: Alexey Kovalev
Department of Physics & Astronomy

