

Seminar über Microwavephysics and Atmospheric Physics

Referent: Dr. Felix Liechti, Swiss Ornithological Institute Sempach

Titel: Identification and quantification of aerial bio-scatterer by radar in near real time

Billions of insects, birds and bats use the aerosphere for migration, dispersive movements or foraging. This enormous movement of biomass plays a key role in ecology. Monitoring aerial movements is technically challenging. Individual tracking devices have been increasingly used over the last decade but these are currently only suitable for relatively large organisms, and the associated costs limits monitoring to a very small sample. Radars provide a tool for investigating and quantifying movement patterns for a wide range of flying organisms (birds, bats and insects). This talk presents the ongoing research at the Swiss Ornithological institute on this topic. More than 40 years ago, we started with manual tracking of single targets and using "human brain classifier" to identify targets based on the radar signatures. Nowadays, we are developing automated recording systems with machine-learning tools to identify and quantify bird and insect movements in near real-time. Only recently, data from networks of weather radars systems are available for the scientific community, enabling monitoring the spatial and temporal movement patterns on a continental scale. In addition, we also apply miniaturized data-loggers on individual migratory birds to track their year-round movements to Africa and back. Altogether, we are aiming on using the recent technological progress to monitor the movement of birds (and others) in the aerosphere to improve our understanding of biological processes. The talk will give the biological background, but will have a main focus on the technology applied.

Zeit: Freitag, 27.10.2017, 10:15 Uhr

Ort: Hörsaal A97, Gebäude exakte Wissenschaften, Sidlerstrasse 5, Bern, Schweiz