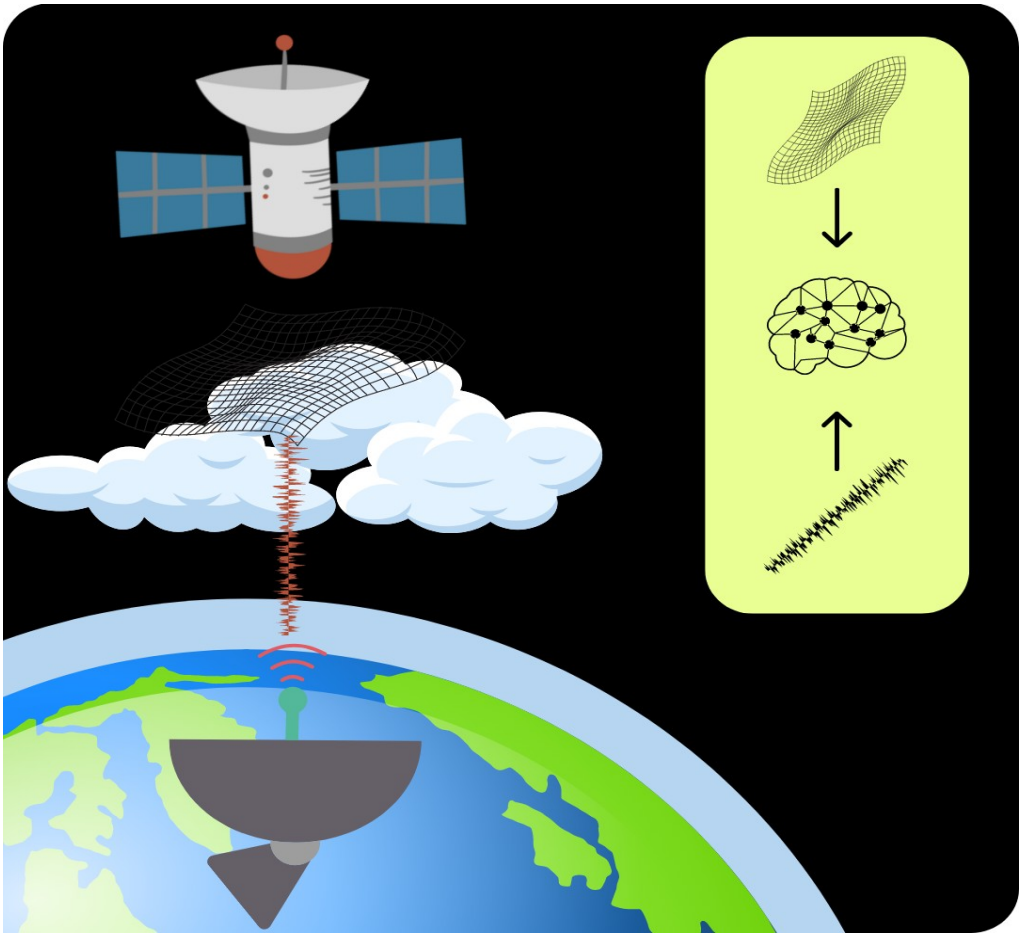

Cloud systems are one of the strong contenders influencing climate change. They not only reflect sunlight or trap infrared radiation but also shape atmospheric flow and circulation. In addition, the spatio-temporal variability of cloud systems affects the grid stability of solar energy power plants. Therefore, cloud systems are relevant for both climate and renewable energy research. Imagers aboard present-generation geostationary satellites offer high temporal and spatial coverage but poorly resolve the vertical structure of clouds. On the other hand, radars offer an in-depth vertical and temporal resolution of cloud profiles but have less spatial coverage.

In this work, we want to design a cross-modal self-supervised neural network that learns to represent the same physical system using the benefits of both instruments. We focus on a better representation learning of cloud systems to study their physical properties.

Tasks:

- You will prepare radar data from the JOYCE observatory in Juelich, Germany.
- You will also help post-analyze the outputs from the trained neural network.

Requirement:

- The interested person should have some basic knowledge of Linux, good python knowledge, and curiosity about neural networks.

For any questions regarding the position, please don't hesitate to contact dchatter@uni-koeln.de