Sea Ice Physics

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Title: (Satellite) Radar backscattering of different Antarctic sea ice types

Data: Satellite, airborne, and in-situ data of sea ice roughness, snow properties, and X- and C-band radar images

(Satellite) Radar backscattering of different Antarctic sea ice types

- Retrieval of sea ice properties and characterization of different sea ice types are major objectives of satellite radar remote sensing. These are challenged by the ambiguous dependence of radar backscatter on multiple ice properties like surface roughness or snow metamorphism.
- In early 2021 we have obtained a unique set of nearly coincident satellite, airborne, and in-situ data of sea ice roughness, snow properties, and X- and C-band radar images from the southeastern Weddell Sea. Satellite data are from the TerraSAR, Sentinel 1, and Radarsat Constellation Missions.
- The goal of this MSc thesis is to **identify sampled ice floes in the satellite imagery and to compare their polarimetric, dual-frequency backscattering properties with results of the airborne and in-situ surveys**.
- There will be an opportunity to closely collaborate with researchers at DLR and in Canada.
- Requirements: Good programming and English language skills, good grades, (experience with working with large geographic data sets is of advantage)

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