Logistic challenges during MOSAiC

Foto: Stefan Hendricks
MOSAiC
Multidisciplinary drifting Observatory for the Study of Arctic Climate
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Central observatory: RV Polarstern

Network of camps on the ice

Operations of research aircraft and helicopters

Visits by four icebreakers from MOSAiC partners

Extended vertical and geographical coverage

Broader geographic coverage and supply

Grafik: Alfred Wegener Institute / Martin Künsting
The Arctic

- Isolation
- Cold
- Polar night
- Storms
- Fog
- Moving ice: Break ups, cracks, Ridges
- Polar bears
**Scale of operations**

**Arctic-wide linkages**
- Collaborating research vessels
- Aircraft (Polar 5,6)
- Arctic buoys, satellites
- Data assimilation studies
- Regional & global climate models

**Regional: Distributed Network**
- Sea ice stations visited by helicopter
- Unmanned aircrafts
- Process & regional model
- Model grid cell

**Local: Central Observatory**
- Ship based
- Sea ice stations
- Process scale observations

**Scale of operations**
- > 1000 km
- < 50 km
- < 5 km

Grafik: AWI
Scale of operations

- 389 days
- More than 80 institutes from 20 nations
- 337 scientists and experts and 105 crew members in the field
- several hundreds more involved on land
- 5 scientific teams, 5 support teams
- Up to 70 metric tons of equipment
- 247 monitoring stations
Logistics

• 389 days – very different conditions:
  • Safety concept
  • Equipment
  • Training for participants

• Infrastructure on board and on ice

• Maintaining the camp
Logistics

- Up to 70 metric tons of equipment
- Limited storage space vs. redundancy
- Accessibility throughout the expedition
- Changing teams
Logistics

- Emergency network for medevac
- 6 other vessels involved in resupply and support
- Cargo operations in the ice
- Runway preparation
Corona

- International travel restrictions
- Aircraft campaign cancelled
- Planned exchanges no longer possible
- Quarantine and testing necessary

Foto: Leonard Magerl
Thank you!