



European
Commission



EUROPEAN
MASTER IN
OFFICIAL
STATISTICS
EMOS



Prague University of Economics and Business



European Big Data Hackathon 2025

Earth Observation: from Space to European Statistics

Brussels, 6-11 March 2025

eurostat 



Ice and Open Water Analysis for Norway Fjord and Finland Lake using Sentinel-1 IW

Project Overview

- Interactive dashboard using Sentinel-1 IW data to monitor ice conditions by 3 indicators for environmental research, maritime planning, and climate monitoring.
- Ice Coverage Index: Measures percentage change in sea ice extent via mean SAR backscatter, indicating ice cover extent and density.
- Ice Thickness Variability: Assesses SAR backscatter deviation to show ice thickness uniformity—higher values mean variable thickness, lower values indicate uniformity.
- Ice Temporal Stability: Tracks max SAR backscatter to show ice persistence, with higher values indicating stability and lower values showing rapid changes.

Igniting Eurostat's Insights with Ice Metrics

- Integrating ice metrics with Eurostat's environmental datasets enhances climate monitoring, enabling data-driven policies for Arctic sustainability and economic impact assessments.
- Eurostat, National Statistical Offices (NSOs) of Arctic and European countries could use for policy decisions.



Jing Zhang
Praveen Sharma

- “The climate change is happening faster in Arctic Europe, need to understand that and how that affects the rest of the world.”

Elizaveta Vereykina

Thank You!