



Landbúnaðarháskóli Íslands
Agricultural University of Iceland



ILMATIETEEN LAITOS
METEOROLOGISKA INSTITUTET
FINNISH METEOROLOGICAL INSTITUTE



FINNISH GEODETIC
INSTITUTE



HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF APPLIED SCIENCES



inDust



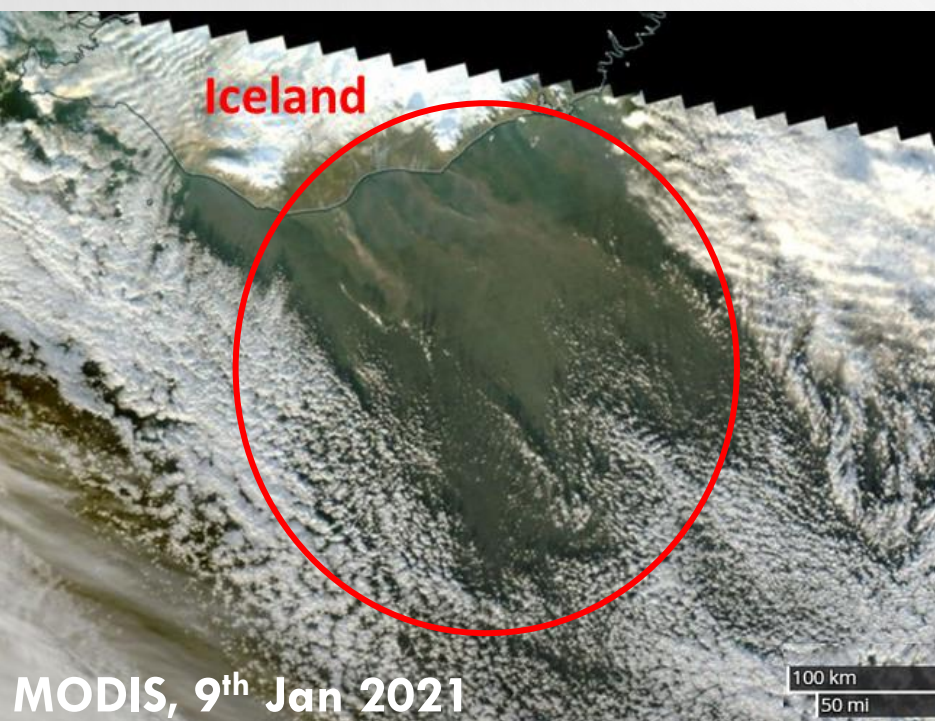
PROGRAMME OF
THE EUROPEAN UNION



LANDMÆLINGAR
ÍSLANDS



IN-SITU AEROSOL MEASUREMENTS IN ICELAND, ANTARCTICA AND SVALBARD IN 2024, INCLUDING PLUMES OF HIGH LATITUDE DUST AND SAHARAN DUST, AND BLACK CARBON HAZE



PAVLA DAGSSON-WALDHAUSEROVA, PAVLA@LBHI.IS

O. ARNALDS, O. MEINANDER, A., BAKLANOV, A. VUKOVIC, S. NICKOVIC, J. KAVAN, B. CVETKOVIC, J-B. RENARD, B. MORONI, D. DJORDJEVIC, F. THEVENET, D. URUPINA, M. ROMANIAS, G. VARGA, A. SANCHES-MARROQUIN, B. MURRAY, J. BROWSE, C. BALDO, Z. SHI, H. OLAFSSON, M. HRABALIKOVA, AND MORE.. + FRAGMENT, HILDA AND EMIT PROJECT TEAMS

= **ICEDUST MEMBERS** >

EGU 2025

WIEN, AUSTRIA | 27 APRIL - 2 MAY 2025



MODIS, 9th Jan 2021

PICO OUTLINE

- IN SITU DUST MEASUREMENT NETWORK IN ICELAND (CAMS NCP ICELAND)
- IN SITU DUST MEASUREMENTS IN SVALBARD (COAL DUST + BC ALSO MEASURED)
- IN SITU DUST MEASUREMENTS IN ANTARCTICA (2024 COMPARED TO PREVIOUS YEARS)
- LONG-RANGE TRANSPORT OF SAHARAN DUST TO ICELAND IN 2024
- BLACK CARBON HAZE FROM BURNING MOSES AROUND THE VOLCANIC ERUPTION IN REYKJANES IN AUGUST 2024
- HIGH LATITUDE DUST NETWORKS (UPDATE 2025) + OPPORTUNITIES FOR STUDENTS

Key facts about HLD:

1. HLD contributes to the Arctic amplification – dust-albedo feedback (Boy et al., 2019, Meinander et al., 2022)
2. HLD was recognized as an important climate driver in Polar Regions in the IPCC report (SROCC, 2019) + AMAP (2021)
3. Dust hot spots in the Arctic are often located in ice-proximal areas with frequent floods bringing fine sediments from beneath the glaciers
4. HLD storms cause severe air pollution (even 1000x higher concentrations than health limits)
5. There are 135 dust days reported annually in Iceland and dust travels thousands of km inside the Arctic and >3,500 km towards Europe
6. HLD has impacts on atmosphere, cryosphere, marine and terrestrial environments, causing severe erosion and land degradation
7. HLD has impacts on socio-economic sectors (health, road safety, energy production, aviation, land degradation etc.)



Swimming pool after dust storm



Damaged cars after dust storm



Snow-dust storms and dirty glaciers

