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Climate-Space X-ECV



Karakoram Anomaly

ECV Database (EDB) Technical note

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Contact:
Frank Paul
Department of Geography
University of Zurich
frank.paul@geo.uzh.ch

Technical Officer:
Anna Maria Trofaier
ESA Climate Office



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Document status sheet

| Version | Date | Changes | Approval |
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Author team:

Frank Paul (GIUZ), Thomas Nagler, Gabriele Schwaizer, Nico Mölg (ENVEO), Andreas Kääh, Désirée Treichler (GUIO), Lander van Tricht, Matthias Huss (ETHZ), Tazio Strozzi (Gamma), Fabien Maussion (UB), Rainer Hollmann (DWD), Christophe Fatras (CLS)

Climate-Space Technical Officer at ESA:

Anna Maria Trofaier (Paul Fisher for this document)

Reference documents

| Acronym | Acronym | Name | Version | Date |
|---------|---------|---|---------|------------|
| [RD1] | EID | Deliverable 1.2: ECV Inventory Database | 0.2 | 30.03.2025 |
| [RD2] | F4PR | Deliverable 2.1: Fit for Purpose Report | 0.4 | 11.11.2025 |



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Purpose

This is the ECV Database (EDB) technical note of the X-ECV Karakoram Anomaly project. It lists the datasets stored in a database for joint use by the project partners. The database is a simple ftp site hosted by partner Enveo and structured into three main categories: glaciers (GLAC), auxiliary data (DEM) and climate data (CLIM). For a detailed description of the datasets, the reader is referred to the ECV Inventory Document (EID) [RD1].

1. Introduction

The main purpose of the database is the storage of datasets that should be consistently used by the different project partners for different purposes. This includes perimeters of the different sub-regions, glacier outlines and other glacier related data, climate datasets and auxiliary datasets such as digital elevation models (DEMs). We have decided to not store raw satellite or climate datasets in the database, but only the resulting spatio-temporal or variable restricted subsets of the datasets, for example glacier outlines and DEMs for the Karakoram only and reanalysis data only for the variables temperature and precipitation but for a larger part of High Mountain Asia (HMA). The regions refer to those described in the F4PR [RD2].

We here describe the status as of the beginning of the mass balance modelling phase. We expect that further datasets will be added in the course of the modelling as not all demands are yet clear. Related updates of the document will be presented at the annual review meetings.

2. The stored datasets

The datasets are provided via ftp (with login) and are accessible in different folders:
database/GLAC/, database/DEM/ and database/CLIM/

In Table 1 below we list key characteristics of the stored datasets, sorted by folder. As a note, the csv and shape files are stored as zip files to facilitate file transfer.

Table 1: Summary of the datasets prepared for joint use by the project partners.

| Folder | Type | Region | Epoch | Format | Description |
|--------|---------------------|-----------|-----------|--------|-----------------------------------|
| GLAC | Perimeter | Karakoram | N/A | shape | from Bhambri et al. 2022 |
| GLAC | Glacier outlines | Panmah | | shape | Test region from RGI 6.0 |
| GLAC | Glacier outlines | Karakoram | | shape | Karakoram from RGI 6.0 |
| GLAC | Glacier outlines | Panmah | 1995-2005 | shape | from RGI 7.0 with new divides |
| GLAC | Glacier outlines | Karakoram | 1995-2005 | shape | from RGI 7.0 as is |
| GLAC | Glacier outlines | Karakoram | 1995-2005 | shape | from RGI 7.0 with new divides |
| GLAC | Surge-type glaciers | Karakoram | 1989-2015 | shape | Points from Bhambri et al. (2017) |
| GLAC | Snow cover Sentinel | Karakoram | 2016-2023 | geotif | 8bit maps per Sentinel path |
| DEM | SRTM DEM v4.1 | Karakoram | 2000 | geotif | Void-filled 30 m version, UTM43 |
| DEM | Copernicus DEM | Karakoram | 2010-2015 | geotif | 30 m GLO-DEM, UTM43 |
| CLIM | Reanalysis ERA5-L | HMA | 2000-2024 | csv | T, P from Copernicus CDS |