

Technical Product Guide

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1. Dataset Overview

This dataset contains **time series of lake water levels** derived from **satellite altimetry** (2002–2021) for multiple lakes on the Tibetan Plateau. Key features:

- **Parameters:** Water level (m, EGM08/WGS84), uncertainty (m), data source flag.
- **Coverage:** Spatial (lat/lon) and temporal (start/end dates) per lake.
- **Sources:** Envisat, ICESat, CryoSat-2, Jason series, SARAL, Sentinel-3.

2. File Structure

2.1 Time Series (TXT Files)

- **Naming:** \$LakeName\$.Water Level.txt (e.g., Aiyong_Co_Water Level.txt).
- **Columns:**

Column	Description	Unit	Example
Date/Time	Acquisition date (yyyy/mm/dd)	–	2010/12/01
WL [m]	Water level (orthometric height)	m	4293.1483
WL unc [m]	Uncertainty (standard deviation)	m	0.2371
Source	Satellite mission flag (1–8)	–	3 (CryoSat-2)

2.2 KML File

- **Purpose:** Geographic boundaries of lakes (viewable in Google Earth/QGIS or plottable in GMT).
- **Usage:** Open in GIS software/GMT to visualize lake locations (see example below).

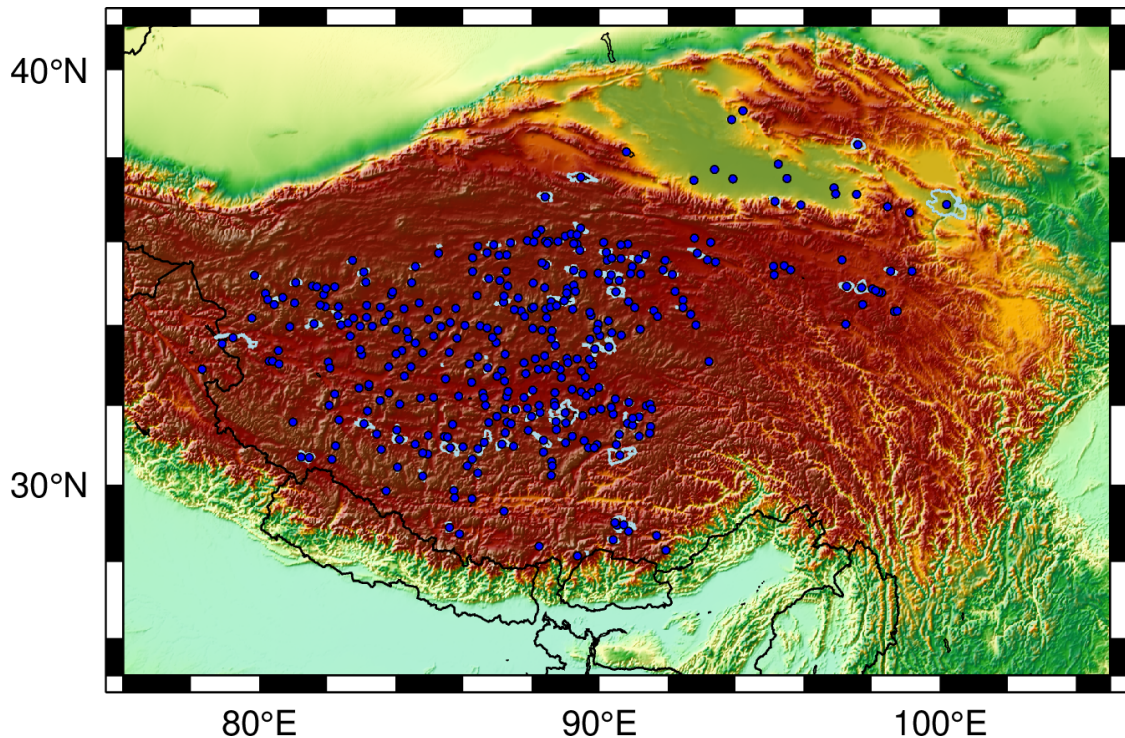


Figure 1: Example KML visualization using GMT.

2.3 Readme dataset info (Markdown File)

- **Contents:**
 - Metadata table (lake names, coordinates, date ranges, area, data points).
 - Parameter definitions and source flag key.
 - Contact/PI information.

3. Processing Workflow

1. Data Acquisition:

- Satellite altimetry tracks over lakes (multi-mission).

2. Quality Control:

- Filtering outliers, cross-mission calibration.

3. Formatting:

- Convert to orthometric heights (EGM08).
- Calculate per-track uncertainties.

4. Publication:

- Structured as TXT + KML + README.

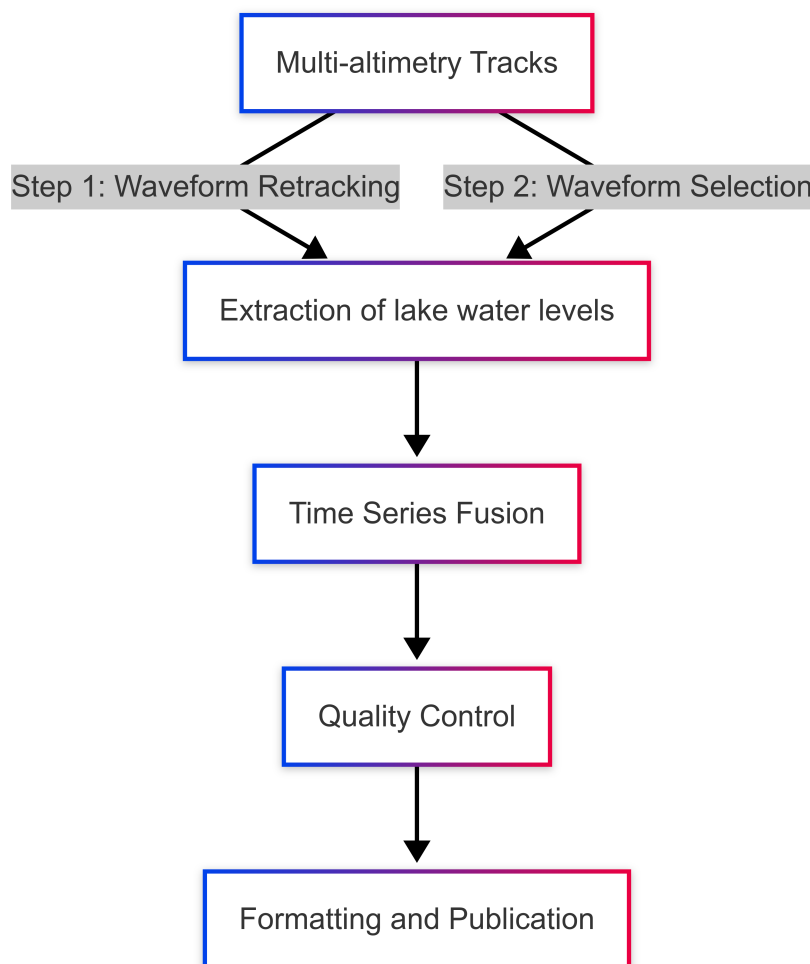


Figure 2: Simplified processing workflow.