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**Source code of the Multidimensional Small Baseline Subset  
(MSBAS) software (version 10) for multidimensional  
constrained and unconstrained deformation analysis of  
partially coherent DInSAR and speckle offset data**

**S.V. Samsonov**

**2025**

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This Geomatics Canada Open File contains the source code of the Multidimensional Small Baseline Subset (MSBAS) Software Version 10 and three sets of test data.

The Samsonov (2024) manuscript provides detailed instructions and is intended to serve as a comprehensive manual for the MSBAS Software Version 10.

## References

Samsonov, S.V., 2024. Multidimensional Small Baseline Subset (MSBAS) Software for Constrained and Unconstrained Deformation Analysis of Partially Coherent DInSAR and Speckle Offset Data. Canadian Journal of Remote Sensing, doi: 10.1080/07038992.2024.2424753.

### 1. Installation Instructions and Requirements

- a. Requirements for MSBAS Software Version 10:
  - i. mpic++ (also referred to as mpi-default-dev)
  - ii. libgdal-dev
  - iii. liblapack-dev
- b. Requirements for msbas\_extract (used to extract time series from binary output):
  - i. g++
  - ii. libgdal-dev
- c. Requirements for msbas\_plot\_extract.sh (used for plotting extracted time series):
  - i. bash
  - ii. gnuplot

### 2. Compilation Instructions

- a. To compile MSBAS Software Version 10, navigate to the MSBAS directory and run:
  - i. `cd msbas`
  - ii. `make`
- b. To compile msbas\_extract, navigate to the msbas\_extract directory and run:
  - i. `cd msbas_extract`
  - ii. `make`

A list of supported parameters can be found in the file `supported_parameters_msbas_v10.pdf`, which has been extracted from Samsonov (2024).