

Standardized Drought Analysis Toolbox (SDAT) Software Package

User Guide

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This code can be used to generate standardized indicators such as:

- SPI: Standardized Precipitation Index
- SSI: Standardized Soil Moisture Index
- SRI: Standardized Runoff Index (also known as Standardized Streamflow Index, SSFI)
- SRHI: Standardized Relative Humidity Index
- SGI: Standardised Groundwater level Index
- SSWSI: Standardized Surface Water Supply Index
- SWSI: Standardized Water Storage Index

The source code can be downloaded from here: <http://amir.eng.uci.edu/sdat.php>

References:

Farahmand A., AghaKouchak A., 2015, A Generalized Framework for Deriving Nonparametric Standardized Drought Indicators, *Advances in Water Resources*, 76, 140-145, doi: 10.1016/j.advwatres.2014.11.012

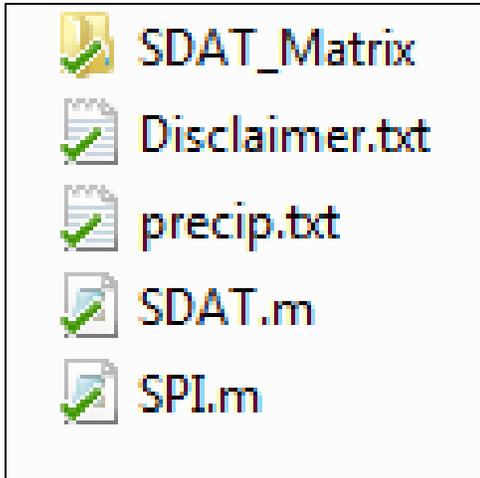
<http://amir.eng.uci.edu/publications/15 Drought Standardized Index AWR.pdf>

Hao Z., AghaKouchak A., Nakhjiri N., Farahmand A., 2014, Global Integrated Drought Monitoring and Prediction System, *Scientific Data*, 1:140001, 1-10, doi: 10.1038/sdata.2014.1.

<http://www.nature.com/articles/sdata20141>

Overview of SDAT Components

SDAT includes the following files:



SDAT.m: calculates nonparametric standardized index based on any input data set (e.g., soil moisture, precipitation, runoff - input data should be a time series - sample input data are included).

SPI.m: calculates nonparametric Standardized Precipitation Index (SPI) or nSPI. The code is similar to SDAT.m. The title of the final graphs is set to Standardized Precipitation Index (sample input data are included - input data should be a time series).

SDAT_Matrix.m (in SDAT_Matrix Folder): this file is similar to SDAT.m. The difference is in the form of input data. SDAT.m can handle time series (vectors). SDAT_Matrix.m is designed for a matrix data (x, y, z) - sample data are included.

How to Run?

Open .m files and run them using Matlab. The results will be generated with the sample input data.