




1. Selection of gridded datasets and computation of drought indices

Drought type	Drought indices	Variable	Product	Performance
 Meteorological	SPI (McKee 1993)	P	CR2METv2.5	Selection of products corresponding to each index through a correlation analysis
	SPEI (Vicente-Serrano et al., 2010)	P & PE	CR2METv2.5	
 Soil moisture	Empirical Standardised Soil Moisture Index (ESSMI) (Carrao et al., 2016)	Soil moisture	ERA5 Land	
 Streamflow	Standardised Snow Water Equivalent Index (SWEI) (Huning et al. 2020)	SWE	ERA5 Land	
	Standardised Streamflow Index (SSI) (Vicente-Serrano et al. 2012)	Q	In-situ measurements	

2.1. Cross-correlation analysis

Cross-correlation analysis between the selected drought indices and the SSI-1 considering different lags

$$\text{[Wavy lines]} = f(\text{[Cloud icon]}, \text{[Soil icon]}, \text{[Water icon]})$$

2.2. Event coincidence analysis

Quantification of how many Q drought events coincide with a meteorological, soil moisture or snow drought events for a given month

$$\text{[Bar chart]} = f(\text{[Cloud icon]}, \text{[Soil icon]}, \text{[Water icon]})$$

3. Evaluation

Evaluation of the results according to 100 near-natural catchments over continental Chile

a) Over all catchments

b) Per hydrological regime

1. Nival
2. Nivo-pluvial
3. Pluvio-nival
4. Pluvial