Soil Moisture Percentile

Soil moisture percentiles are an indicator of growing season conditions in the context of historical observations. The percentiles are calculated using the Land Verification Toolkit (LVT; Kumar et al. 2012; 2014) using soil moisture outputs from the following FLDAS experiments:

Model and Spatial Resolution (lat/lon)	2001-present	1982-present
VIC 4.1.2 @ 0.25°	RFE2 rainfall + GDAS meteorological forcing	CHIRPS rainfall + MERRA meteorological forcing
Noah 3.3 @ 0.1°		

First, the soil moisture climatology is generated, using daily gridded outputs from model simulations. The climatology for a particular calendar day is the list of rainfall estimates over all years (start year to 2014) in a 5 day moving window (2 previous days, current day and 2 next days.
For example, the Jan 3 climatology groups Jan 1 to Jan 5 for each year 1982, 1983, 1984,... to 2014 (5 days x32 years = 160). Next, the percentile of each day's rainfall estimate is computed using that day's climatology. Finally, the computed daily values are averaged to produce monthly percentile estimates.

References

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