EMS Annual Meeting Abstracts
Vol. 14, EMS2017-556, 2017

Global in-situ climatology datasets: A comparison of data sources and their use within a routine quality control process

Ian Simpson, Colin Morice, and Mark McCarthy
Met Office, Hadley Centre, Exeter, United Kingdom (mark.mccarthy@metoffice.gov.uk)

Climatological standard normals are averages of climatological data computed for periods of 30 years. These normals have long been used to assess recent conditions against a benchmark or reference ‘normal ‘to judge whether or not recent conditions have been particularly unusual (WMO, 2007). In this paper we present an inter-comparison of different collections of global standard normals from multiple sources including Met Office holdings of historical CLIMAT bulletins (WMO, 2009), WMO normals as held by the National Oceanic and Atmospheric Administration (NOAA, 2017), and two datasets developed by University of East Anglia.

A key aim of this study was to compare and review the alternative sources, assessing their areas of consistency and disagreement and the geographical distributions of differences, which may be important for some climate applications. In data sparse tropical regions the choice of methodology used to generate the normals leads to significant differences. The implications of these differences for a particular application within the routine quality control process of CLIMAT bulletins conducted at the Met Office is reviewed.

World Meteorological Organization (2007), The Role of Climatological Normals in a Changing Climate. WCDMP-No. 61, WMO-TD No. 1377, http://www.wmo.int/pages/prog/wcp/wcdmp/documents/WCDMPNo61.pdf

World Meteorological Organization (2009), Handbook on CLIMAT and CLIMAT Temp recording. WMO-TD No. 1188, https://www.wmo.int/pages/prog/www/OSY/Publications/TD1188/HandbookCLIMAT-CLIMATTEMP_en.pdf

NOAA, 2017: World Weather Records. http://www.ncdc.noaa.gov/wdc/index.php?name=worldweatherrecords.