In this contribution, we present the results of the development of long gridded climate time series, which cover the territory of Ukraine for the period of 1946-2020 (75 years). The spatial resolution of the developed data is 0.1°×0.1° (approximately 10 km in both longitude and latitude directions), while their time discreteness is 1 day. Four essential climate variables are included in the dataset, namely daily sums of atmospheric precipitation and daily minimum, mean and maximum air temperature. The created gridded product is based on the complete collection of weather measurements, performed at 178 meteorological stations of Ukraine, which constitute the modern national observation network. Quality assurance check, homogenization and gridding of the station time series were performed by means of widely used and well approved climatological software, i.e. INQC, Climatol and MISH, respectively. The produced gridded time series were statistically compared on the monthly and daily time scales with several existing data sets, which have the same spatial resolution (i.e., previously developed gridded monthly data of Ukraine, ERA5-Land, E-OBS). The comparison showed good accordance with UA monthly data (partly obtained from other paper sources than the daily data) and acceptable agreement with ERA5-Land and E-OBS data. The developed long gridded time series are of great importance as they were built with the involvement of as many real weather measurements as possible. Therefore, they can be used as a reference for a wide variety of climatological applications for the territory of Ukraine.

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