South Sudan, Sudan, and the surrounding region experienced abnormally hot weather the week of March 15, 2024, with temperatures reaching 45°C. This heat wave, which prompted the Ministry of Health and Ministry of Environment and Forestry to issue a joint public advisory on March 15 and close schools for two weeks, was accurately predicted three weeks in advance by the 2m temperature sub-seasonal forecast of GEOS-S2S-2 model, initialized on February 25, 2024.

MERRA-2 data (left panel) of the observed 2-meter temperature (T2M) for the week of March 15, 2024 verified the 3-week forecast of the GEOS-S2S-2 model (right panel). The amplitude of temperature anomalies in the model is less than the observations, but the spatial patterns are similar.