The heat waves are one of the dangerous natural hazards which lasts abnormal hot weather and causes extensive damage to life and property. In Korea this year, heat waves and tropical nights topped records and the number of people who suffered with heat-related illnesses are doubled. In this study, forecasting excessive heat wave system was developed using Korea Meteorological Administration (KMA) Ensemble Prediction System for Global (EPSG). To evaluate excessive heat wave forecast system, 2018 East Asia heat wave cases were examined during July to August which is period occurring heat wave frequently. Four heat wave indices—intensity, probability, start day, and duration—were defined. Excessive heat wave forecasting system was developed following methodology. First, historical temperature and heat wave indices were computed at each grid point. Then the EPSG real-time forecast were examined with weekly forecast. The result showed that forecasting skills of temperature and indices were decreased with longer EPSG model forecasting lead time. Nevertheless, the patterns of intensifying heat waves were in the west of Korea and the coast of China. However, ensemble forecast approaches showed promising result when used for forecasting excessive heat wave.

**Key words:** Heatwave, EPSG, Weekly forecast

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