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Temperature extremes in South Korea and their health impacts

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Temperature extremes in the summertime in South Korea during the past 30 years (1971-2000) are investigated. Extreme temperature in late July and early August of 1994 over South Korea caused major heat-related deaths. Influences of heat waves on daily mortalities in 6 major cities of South Korea were also investigated. Daily deaths in Seoul were exponentially increased with the daily maximum temperature. However, there were the regional differences of the temperature dependence on the mortality because of an acclimation effect of inhabitants. The threshold temperature (with respect to daily maximum temperature) in Seoul was found to be 31.2 deg C provided that it is determined by a two-phase regression model. The meteorological causes of recordable hot weathers in late July of 1994 and their consequences of human health were also investigated. Strong surface heating caused by strong insolation under clear sky condition and dry surface condition due to prolonged drought is likely to closely associated with the extreme hot weather in 1994 in South Korea.