

Extreme heat events of warm season in IranHojjatollah Yazdanpanah[†];[†] university of Isfahan, IranLeading author: hojjaty@yahoo.com

Extreme temperature can be very harmful specially on human and other organisms and has been intensified by global warming. Based on the daily maximum temperature records at 25 synoptic stations during 1961-2004, we studied the geographical patterns and temporal variations of extreme hot days (H*) over Iran. The extreme hot day was defined as when the Z score of daily maximum temperature is greater than 2. According to these criteria the monthly frequency of extreme hot days and the number of heat waves were determined for all stations. The results shows an rising trend in the H* during last two decades. The 1983, 1997 and 1998 have the maximum number of observed H* in the studied period. The July-August 1983, July-August 1997 and July 1998 heat waves were the longest and most intensive heat waves that has struck Iran during 1961-2004. Synoptic analysis of these three selected heat waves has been shown that: In most synoptic pattern during heat waves a 500 hPa ridge, with Azores anticyclone origin was seen. At the surface, thermal low pressure will established over the central parts of Iran with an arm extending into the east parts of Iran and Pakistan. The 1000-500 hpa thickness over Iran is the maximum in the region. These synoptic pattern intensified stability and descending air current of atmosphere over Iran and encouraged relatively clear skies and strong solar insolation.