Severe Hail Climatology of Turkey

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ABSTRACT
A climatology of severe hail for Turkey is being constructed using newspaper records, meteorological observations, government agencies and identical sources. Since hail is a small scale event in both spatial and temporal meanings, it is usually underreported especially over less-populated areas and during night time. Non-severe hail which is not associated with important damage is also subject to underreporting. The preliminary results of the study includes over 600 records between 1950 and 2010, many of which does not have hail diameter, severity or time of the day information. Some of the records have photographs or videos enabling confirmation of the hail size, when some are depended upon eyewitnesses which are sometimes exaggerated (Fig 6, 7). The database is built up using the most reliable records. More than half of severe hail cases are expressed as walnut size. The largest reliably reported size of hail is 65 mm (90 grams) which is observed in Ankara in 06.05.1953, although 300-400 grams of hailstones have been observed in southeast according to some eyewitness records published at a major national newspaper. The collected data shows that hail in Turkey usually occurs in spring and summer months. Approximately 4/5 of the hailstorms are observed during afternoon and evening hours. However, morning hours also have significant number of records. The geographical distribution is more or less homogeneous, but the Mediterranean coast, Marmara region, northeast part of the country as well as central Anatolia have in particular higher records.

DATA & CLASSIFICATION
Severity of the hail is usually defined according to its diameter (Tuovinen et al. 2009), Giaiotti et al. (2003), Sioutas et al. (2009), Webb et al. (2009). In this study, hail with 2 cm diameter or larger is considered as severe (Table 1). More than 4/5 of the records are from newspapers, which usually define the size with keywords like walnut, egg, etc. Major newspaper (Hurriyet, Cumhuriyet, etc.) and news agency (CHA, NTV, MSNBC etc.) archives are searched on internet and old copies are browsed in Beyazit State Library in Istanbul. Browsing process is still going on and different sources are being investigated. Number of severe hail days known so far is 129 (Fig 1).

RESULTS
It is obvious that most of the available records are from the last decade (Fig 2). According to the distribution of severe hail throughout the year (Fig 3), most of severe hail occurs between mid-April and mid-June in Turkey. Although large hail has a peak on June, very large hail has its peak on July, when large hail show an impressive decrease (Fig 5). Diurnal distribution of large hail shows a peak for afternoon and evening hours (Fig 4). During night time, very large hail is recorded more than large hail. Geographical distribution is more or less homogeneous (Fig 8).

REFERENCES