



## **Mediterranean cyclone and foehn in Sofia for the period 1975-2014**

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Foehn is a well-known example of local atmospheric circulation and in addition it is a compound event when a warm and dry wind blowing on the leeward side of the mountains trigger quick snowmelt in spring or spread of forest fire in summer time resulting in large economic losses. The foehn in Bulgaria is observed on the northern slopes of the mountains, as a result of warm air advection from the south and southwest associated with approaching Mediterranean cyclones. Its occurrence is highest north of the Vitosha mountain where the Bulgarian capital Sofia is located. A study for the period 1975 - 2014, identified 280 days with foehn in Sofia, which are realized in 201 synoptic situations. Based on a manual synoptic classification using the trajectory of the Mediterranean cyclones the foehn is classified into four main types. Of them 103 (51 %) are of type I, 48 (24 %) are of type II, 44 (22 %) are of type III, and 6 (3 %) are of type IV. The average annual number of days with foehn is 7 with a tendency for reduction of the number of days after 1990 (5.9 days). The aim of this work is to conduct an automated classification of the synoptic conditions leading to foehn in Sofia using the ERA-Interim reanalysis. The results from this work will be presented and compared to the manual foehn classification. The goal of this work is to facilitate foehn diagnosis and prognosis for the needs of operational forecasting of compound events for Sofia.