

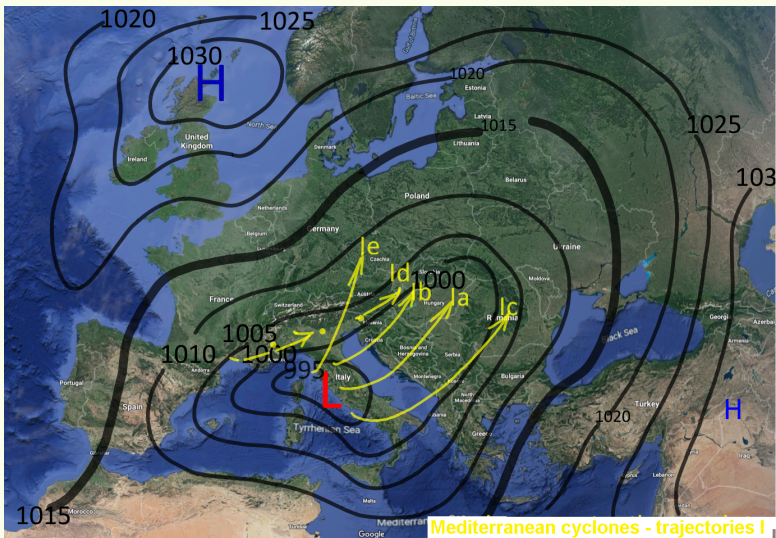
Mediterranean cyclones and severe weather warnings in Bulgaria

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Guergana Guerova (1)

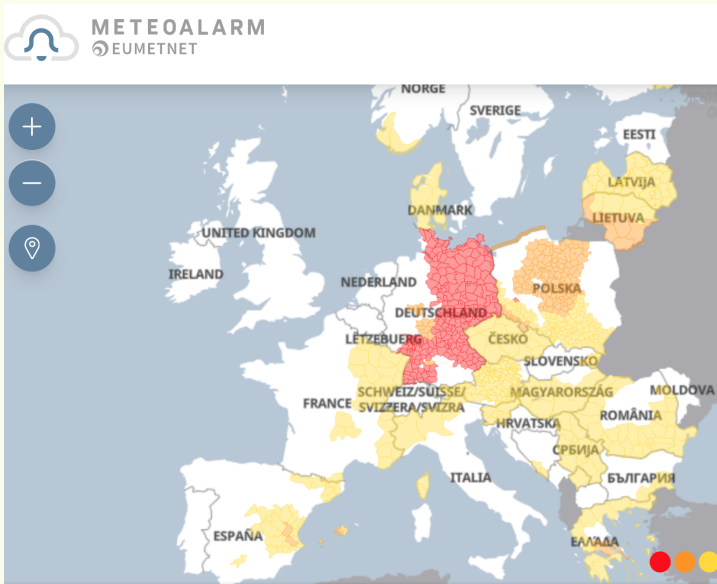


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(2) National Institute of Meteorology and Hydrology, Sofia, Bulgaria

8th International Colloquium "Fundamental and scientific aspects of GNSS"
14 September 2022, Sofia, Bulgaria



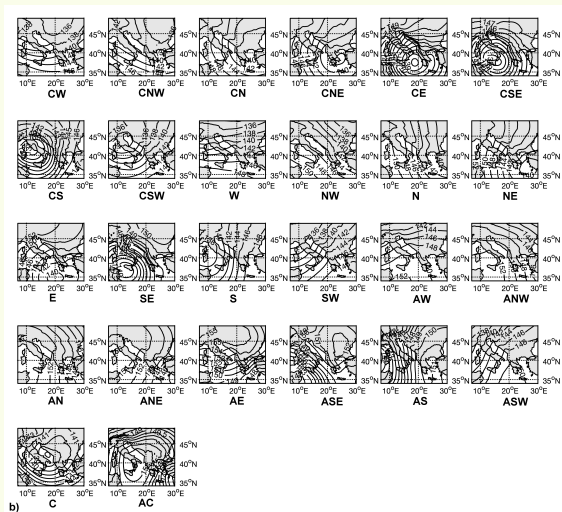
Stoev K. and G. Guerova, 2020. Foehn classification and climatology in Sofia for 1975-2014. *Idojaras*, 124/4, 483-497.



- Meteoalarm warning with yellow and orange code 2010-2021: 543



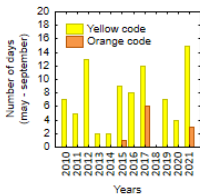
- 8 Directional (W, NW, N, NE, E, SE, S, SW)
- 8 Cyclonic (CW, CNW, CN, CNE, CE, CSE, CS, CSW)
- 8 Anticyclonic (AW, ANW, AN, ANE, AE, ASE, AS, ASW), C and A



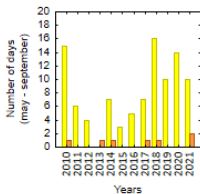
Meteoalarm heat, thunderstorm, precip. climatology (2010-2021)

- Heat 2017/2021 max (18 days), 2018 min (0 days)
- Thunderstorm 2018 max (17 days SfD, 16 days Sf), 2013 min (1 day)
- Rain 2018 max (21 days SfD, 20 days Sf), 2013 min (1 day)

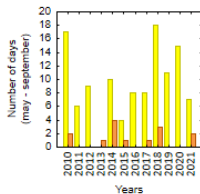
Heat warnings in Sofia District



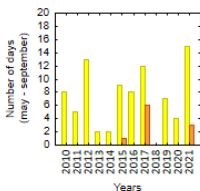
Thunderstorm in Sofia District



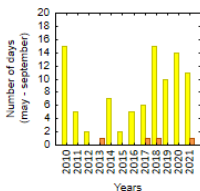
Precipitation in Sofia District



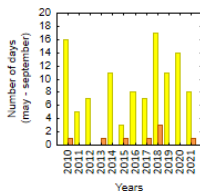
Heat in Sofia



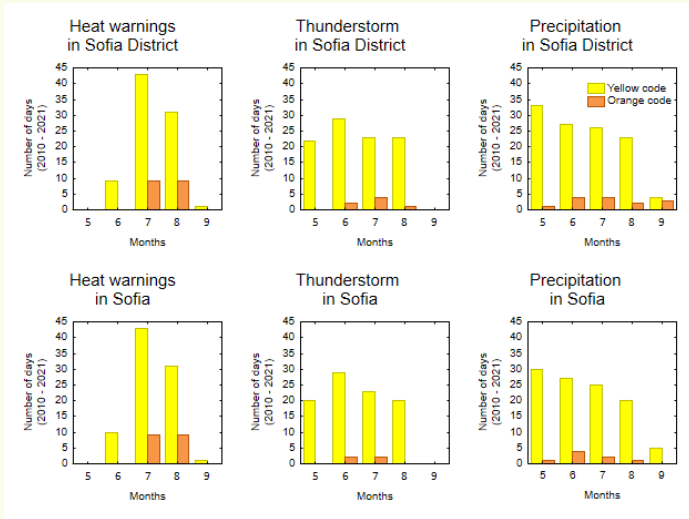
Thunderstorm in Sofia

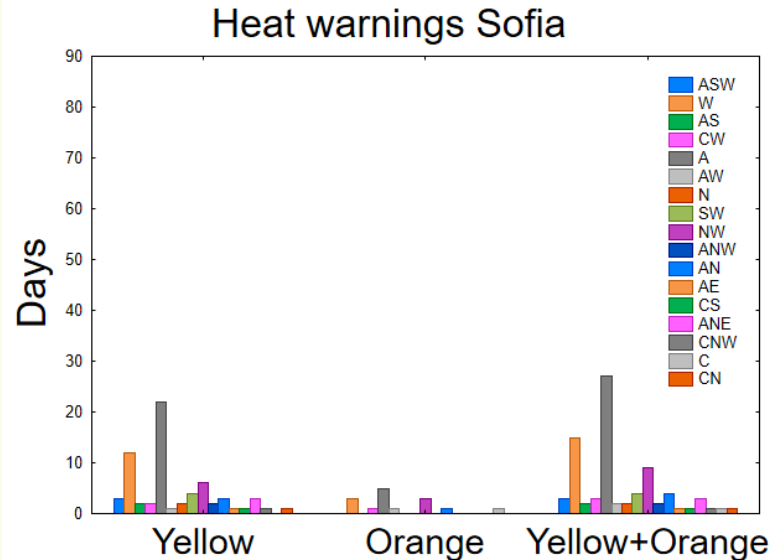


Precipitation in Sofia



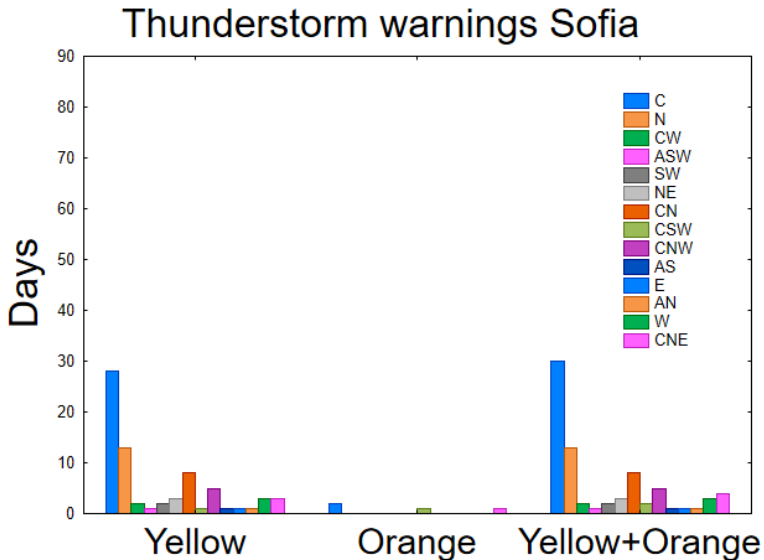
- Heat July max (51 days), May min (0 days)
- Thunderstorm June max (31 days), Sept. min (0 days)
- Rain May/June max (34/32 days SfD, 31 days Sf), Sept. min (7 days SfD, 5 days Sf)





Circulation types: Thunderstorm May-September 2010-2018

- Cyclonic with 30 days
- North with 13 days



MedC

S. Tsalova

Why

MedC

EU

NIMH

Method

JCT26

Results

Year

Month

Heat-C

TH-C

Rain-C

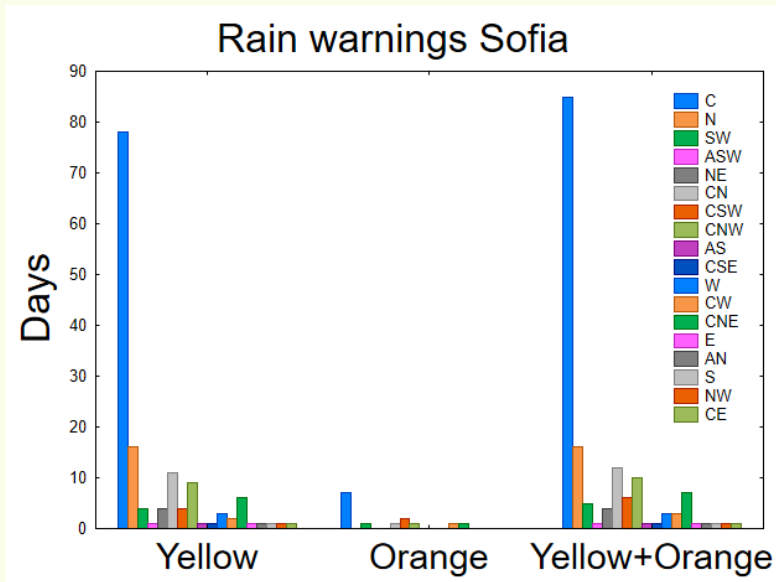
Heat-IWV

TH-IWV

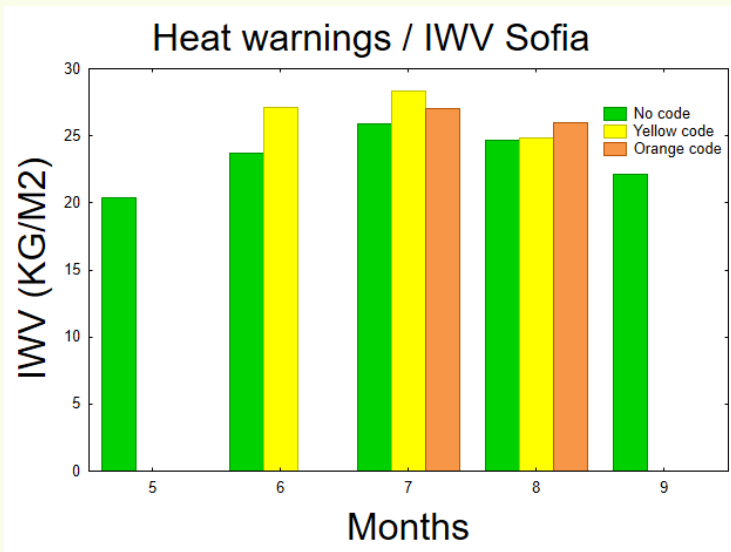
Rain-IWV

Summary

- Cyclonic with 85 days
- North with 16 days

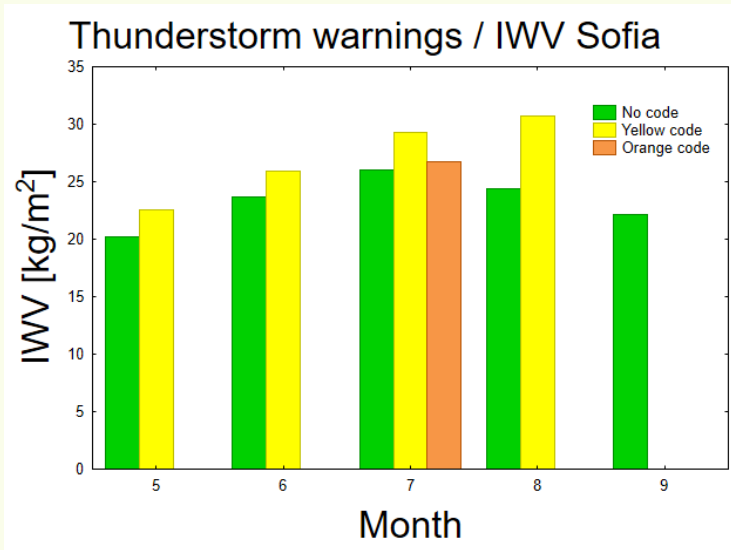


- IWV for days with yellow and orange code higher than days without code in June, July and August

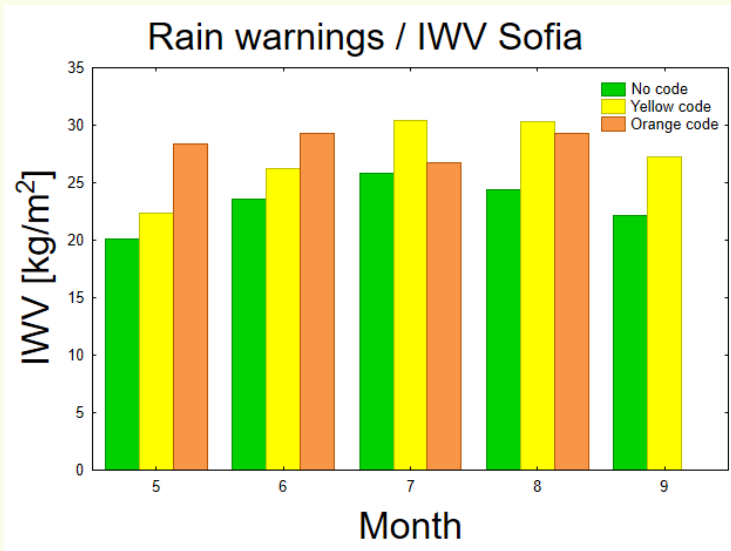


Meteoalarm Thunderstorm warning: IWV Sofia 2010-2018

- yellow coded from May to August
- August IWV: 24.4 kg/m^2 without code and 30.7 kg/m^2 yellow code



- IWV is higher when rain warning in May, June, July, August and September



- Meteoalarm yellow and orange code 2010-2021: 543
- May-September 2010-2021: Rain - 115 (21%); Heat - 103 (18.9%); Thunder - 96 (17.7%)
- MAX: Heat 2017/2021 - 18 days; Thunderstorm 2018 - 16 days; Rain 2018 - 20
- MAX: Heat - July 51 days; Thunderstorm - June 31 days; Rain May/June 31 days
- Mediterranean cyclone: Rain - 85, Thunder - 30
- IWV higher values for days with codes

Acknowledgement:

- Prof. Piia Post from University of Tartu for providing circulation classification.

THANK YOU!