

# Climatology of heat waves characteristics based on different metrics- Application on a centennial air temperature record of the eastern Mediterranean

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## Use of 4 Heat Waves (HWs) Definitions

**HW-D1:** a period of  $\geq 2$  consecutive days with  $T_{\max} \geq 95^{\text{th}}$  percentile of the  $T_{\max}$  distribution for 1 May through 30 September (*Anderson and Bell, 2011*) over a reference period.

**HW-D2:** As in HW-D1 but for  $T_{\min}$

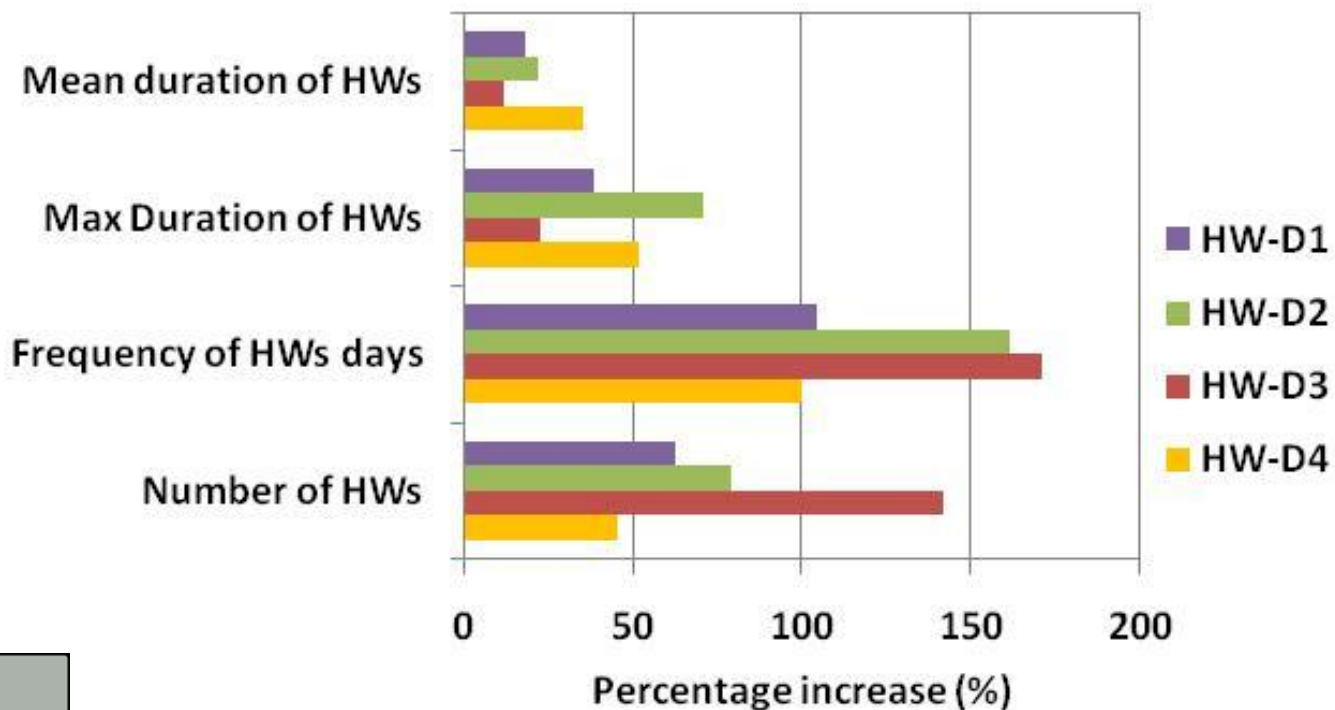
**HW-D3:** a period of  $\geq 3$  consecutive days with  $T_{\max} \geq 95^{\text{th}}$  5-day running percentile of the summer  $T_{\max}$  distribution, centered on each calendar day (*WMO, 2015*)

**HW-D4:** The **Excess Heat Factor** (EHF) (*Nairn et al. 2009*), considering the current (**3-days**) deviations from climatological mean + previous month conditions to account for **acclimatization** concern.



- Application of 4 HWs definitions on 120-years (1900-2019) temperature record in Athens
- Consideration of 4 HW measures: mean duration, longest duration, number of HWs, frequency of HWs days.

### Increase (%) from 1900-1959 to 1960-2019



- Changes in the *timing* of HWs season (1900-2019) for 4 HWs definitions
- Earlier occurrence of HWs for all HWs definitions by 2-2.5 days/decade

