Is the weather getting weirder?

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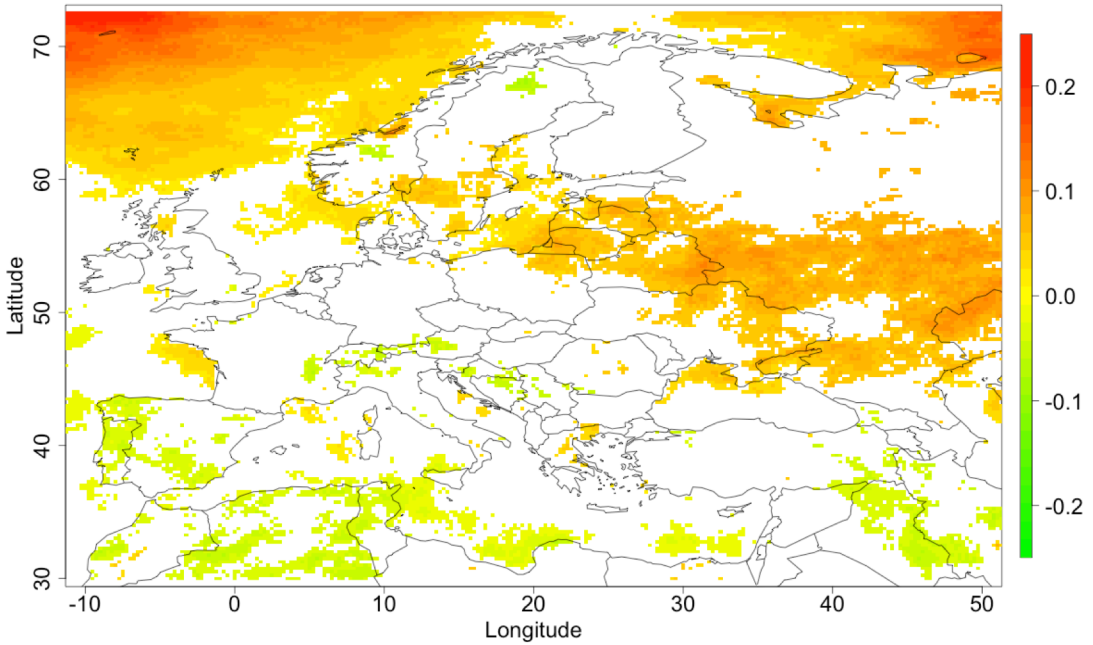
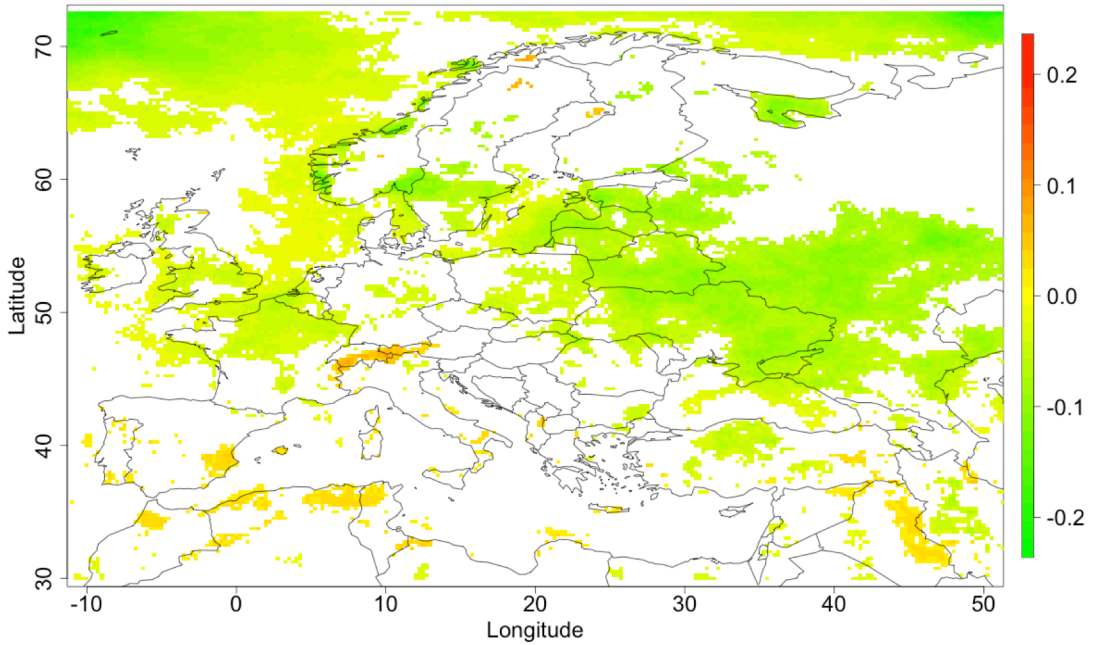
Methodology and data

- Dataset
  - ERA5 – daily Tmean
  - 1950 – 2020
  - Europe
- Methodology
  - Tdiff = T(d+k)-T(d) with k = 1,2,3,5,7
  - Is there a significant trend (p-value < 0.05) on:
    - $Tdiff_{05}$ -> Tdiff < Q_{05}(Tdiff)?
    - $Tdiff_{95}$ -> Tdiff > Q_{95}(Tdiff)?

Results

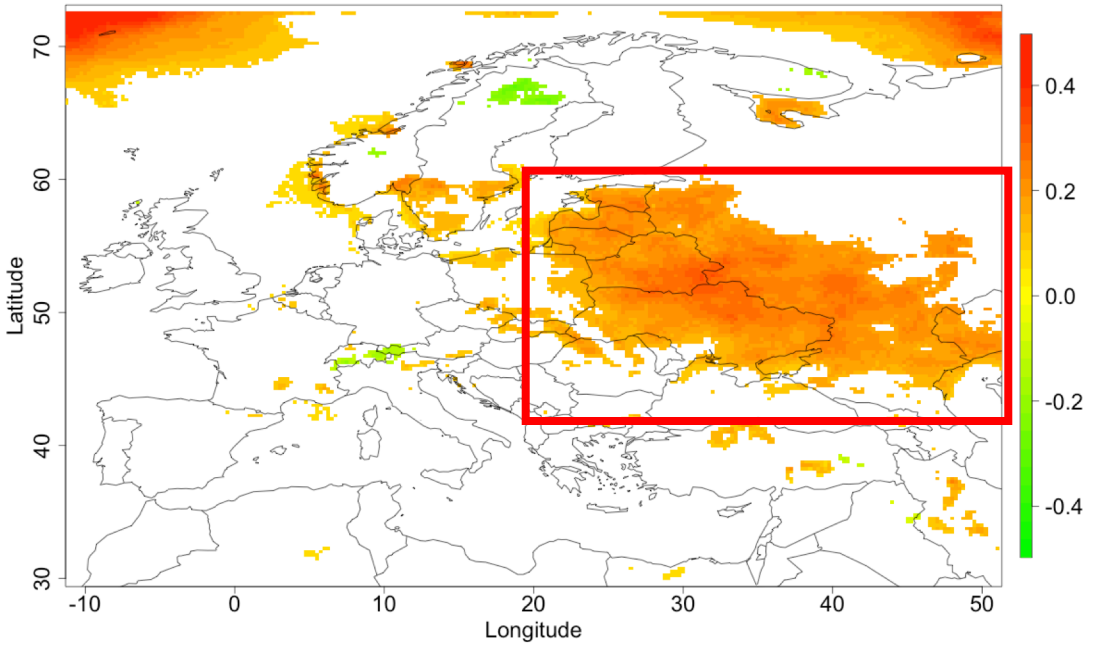


$Tdiff_{05}$
Red regions -> less sudden cold
Green regions -> more sudden cold



$Tdiff_{95}$
Red regions -> more sudden heat
Green regions -> less sudden heat

Results - winter season



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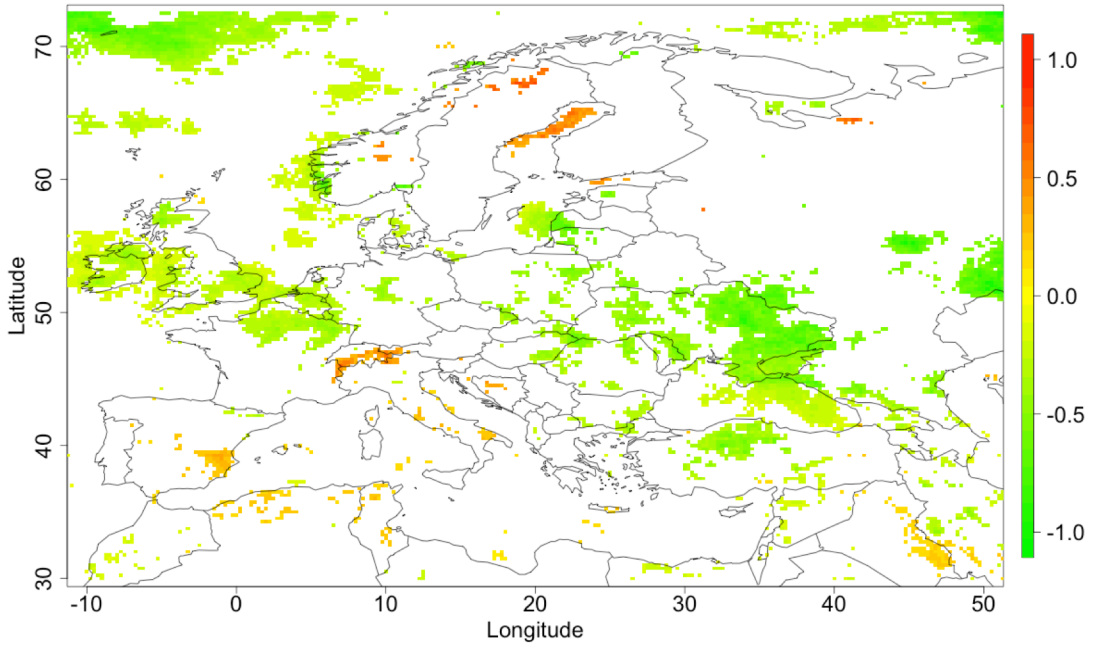

$Tdiff_{95}$
Red regions -> more sudden heat
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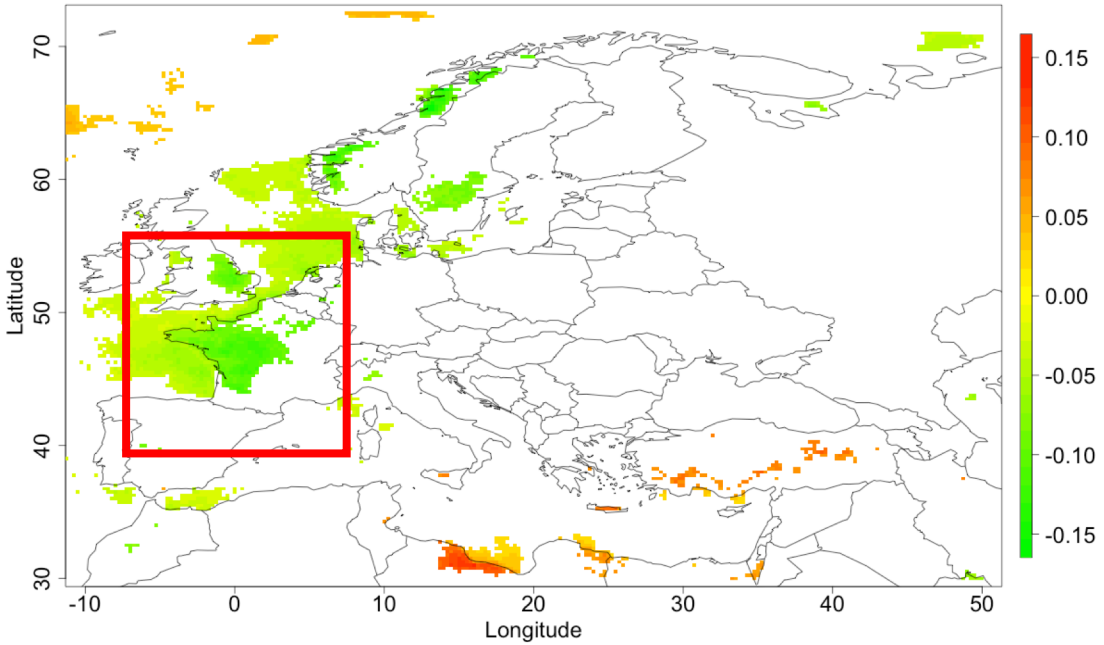
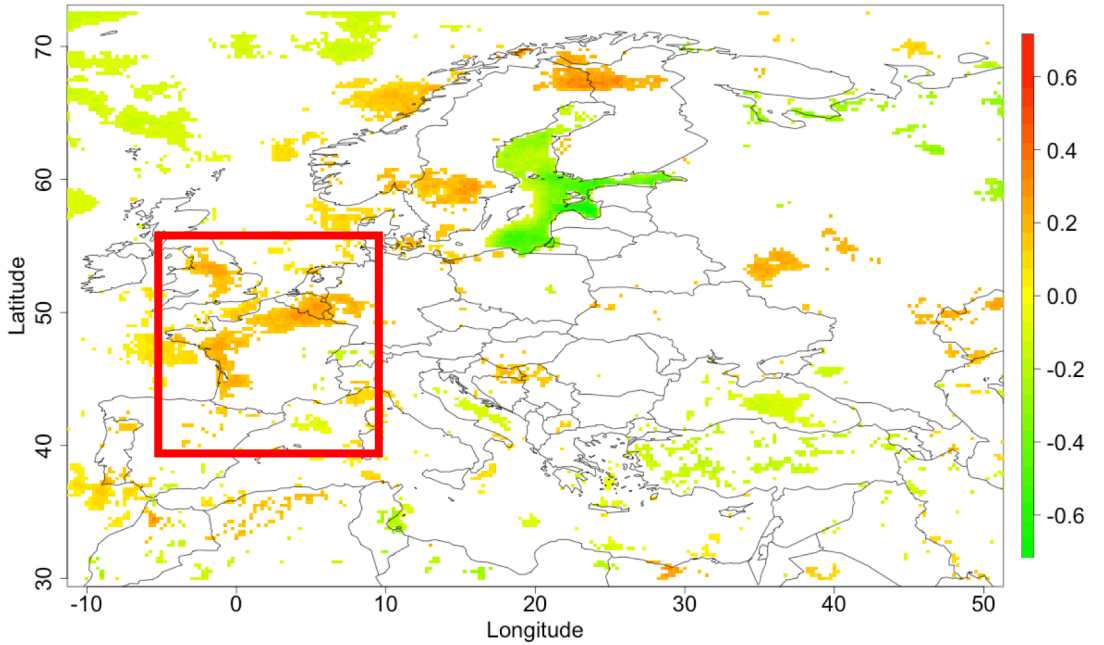
Results – summer season



$Tdiff_{05}$
Red regions -> less sudden cold
Green regions -> more sudden cold



$Tdiff_{95}$
Red regions -> more sudden heat
Green regions -> less sudden heat