

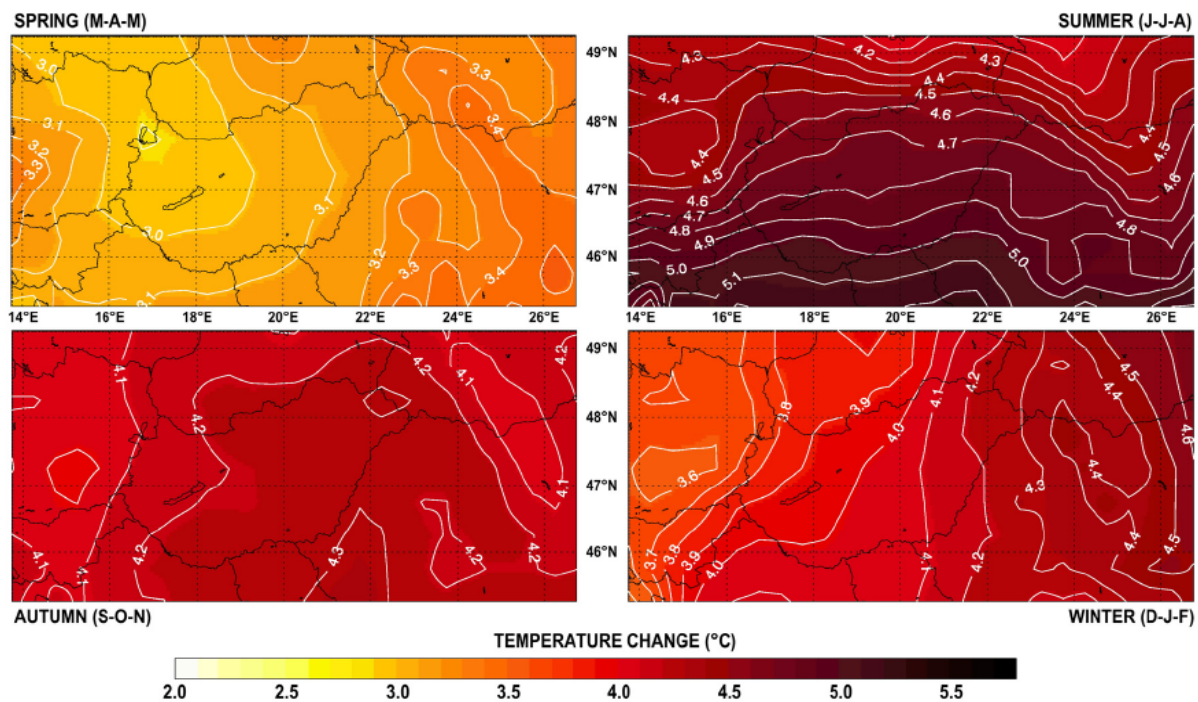
CLIMATE CHANGE AND STRUCTURAL ENGINEERING

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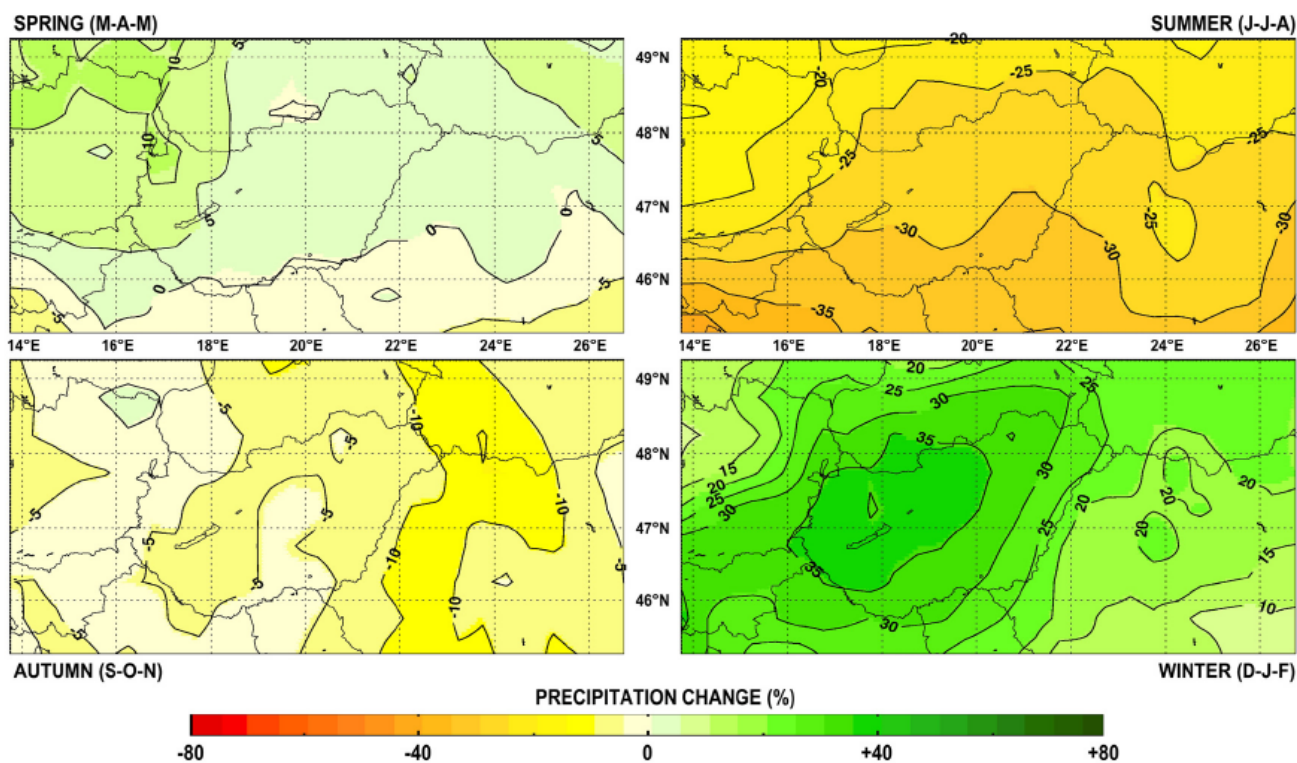
CLIMATE CHANGE AFTERMATH IN HUNGARY

- **global warming (temperature rise 1-1.5°C up to now)**
- **higher and more frequent extremes**
- **less and irregular precipitation, more frequent hail and driving rain**
- **severe drought (2007)**
- **rapid floods (2006 and 2007)**
- **higher wind speeds and wind impulses (August 2006)**



Seasonal temperature change (°C) in the Carpathian basin for 2071-2100 based on European regional model simulation (Bartholy et al.)

Dispersion $\sigma=0,3-1,1^{\circ}\text{C}$



Seasonal precipitation change (%) in the Carpathian basin for 2071-2100 based on European regional model simulation (Bartholy et al.)

Dispersion $\sigma=12-20\%$

SEVERE CONSEQUENCES ON STRUCTURES

- higher wind loads (buildings, bridges)
- problems of asphalt pavements
- problems of concrete technology
- strength of road signs, outside signs, neon signs,
- fastenings of roofs, protruding elements of buildings
- strength of windows
- electric transmission lines
- overboard railroad electric lines
- etc.

Problems to be solved in the frames of a recent research project

- scarce data on wind (3sec wind impulses, wind profile, frequency of events, distribution of events, how to interpolate?)
- time dependence of data
- wind load code changes (how often?) (not from past data, but from uncertain future data)
- the question of old/existing buildings and bridges
- change of traditional fastenings