

# PAST AND FUTURE HEAT WAVES IN CENTRAL/EASTERN EUROPE -CASE STUDY FOR HUNGARY USING PRECIS SIMULATIONS



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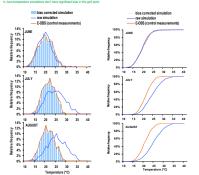
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SUMMARY OF PRECIS

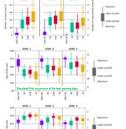
ABSTRACT --- Heat wave events are importa

| HEAT WAVE WARNING LEVELS APPLIED IN HUNGARY   |  |  |  |  |  |
|---|--|--|--|--|--|
| Heat Wave<br>Warning Levels                   | Criteria   | Preventive actions   |  |  |  |
| Level 1<br>Advisory signal<br>Internal use    | The forecasted daily mean temperature (T <sub>mass</sub> )<br>exceeds 25 °C                            | The emergency services prepare for the expected increase in patient traffic  |  |  |  |
| Level 2<br>Warning signal<br>Alert the public | The forecasted daily mean temperature (T <sub>max</sub> ) exceeds 25 °C on at least 3 consecutive days | Media Communications (TV, radio), Web site and newsletters, flyers     Telephone emergency service     Water, Fansharing     Air conditioned oncess spening     Water Electric Works asspend the cut-off of not paying |  |  |  |
| Level 3                                       | The forecasted daily mean temperature (T <sub>mean</sub> )<br>exceeds 27 °C                            | Strict controll of the actions taken at Level 2  |  |  |  |

Control run: 1961-1990 Integration period: 1951-2100 (for A1B), 2071-2100 (for B2 and A2) Patientals CO, level by 2100 based on the evaluated spendin: SRES A1B, R2, A2,



### Summary of the grid point values for 30-year time slices considering B2, A1B, and A2 scenario for 2071-2100 relative to 1961-1990 reference period

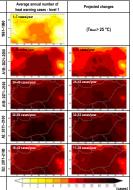


REFERENCES

The Part J. Anguar N. Terris S., Parilla I. Happa D. 2006 in Ogrand drawn and a speciment for the Carpithon base. ISB ARIZ Annual Maning Test
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### HEAT WAVE WARNING - LEVEL 1



- LENGTH OF THE POTENTIAL RISK PERIOD POSSIBLE START POSSIBLE END day 209-237 (29 July - 27 August

POSSIBLE END

POSSIBLE START

day 152-198 (2 June - 18 July)

(day of the year)

LENGTH OF THE POTENTIAL RISK PERIOD

### **HEAT WAVE WARNING - LEVEL 2**

|                | Average annual number of<br>heat warning cases - level 2 | Projected changes       |
|----------------|--|-------------------------|
| 1961-1990      | 0-1 cases/year<br>0.5<br>0.5<br>Average length: 3-5 days | (Titlean,3 days> 25 °C) |
| A1B: 2021-2050 | 1-4 cases/year  Average length: 5-7 days                 | 1-3 casesiyeer          |
| A1B: 2071-2100 | 3-5 cases/year  Awarage length: 6-19 days                | 3-4 cassalyear          |
| A2: 2071-2100  | 4-6 cases/year  Average (ategite 7-18 clays              | 4-5 costlyear           |
| B2: 2071-2100  | 2-5 cases/year  Average taugtic 6-8 days                 | 2-4 cases/year          |

day 195-232 (15 July - 22 August)

## HEAT WAVE WARNING - LEVEL 3

|              | annual number of<br>rning cases - level 3 | Projected changes                  |
|--------------|---|------------------------------------|
| 0-0.1 cases) |   | (T <sub>Maan,3 days</sub> > 27 °C) |
| 0-2 cases)ye |   | 6-2 cases/year                     |
| 2-3 cases/ye |   | 2-3 cases/year                     |
| 2-5 cases/yr | 1   | 2-4 cases lyear                    |
| 1-3 cases/yr |   | 1-3 cases/year                     |
| $\vee$       |   |                                    |

| 1961-1961      | 0-0.1 cases/year  Average length: 0-4 days | (T <sub>Mean,3 days</sub> > 27 °C) |
|----------------|--|------------------------------------|
| A1B: 2021-2050 | 0-2 cases/year  Average length: 5-6 days   | 6-2 cases/year                     |
| A1B: 2071-2100 | 2-3 cases/year  Average length: 6-8 days   | 2-3 cases/year                     |
| A2: 2071-2100  | 2-5 cases/year  Average (cogth: 6-8 day)s  | 2-4 cases/year                     |
| B2:2071-2100   | 1-3 cases/year  Average length: 5-6 days   | 1-3 cases/year                     |
|                | V  | W W W W W W W                      |

- vel 3 are 4, 5, 7, 7, and 6 days in case of 1961-1990, 2021-2050 (A1B), and 2071-2100
- LENGTH OF THE POTENTIAL RISK PERIOD POSSIBLE START day 194-222 (14 July - 12 August)