

New high-resolution climate change projections for Europe

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The latest high-resolution future climate simulations for Europe (from the EURO-CORDEX program) refer to a horizontal resolution of 12.5 km. The first results address changes in annual mean temperature and total precipitation across Europe for three scenarios (A1B, RCP4.5 and RCP8.5) and the time periods 2021–2050 and 2071–2100 (compared with 1971–2000).

According to these results, under a high-end climate change scenario (RCP8.5), large parts of Northern Scandinavia, Eastern Europe and the Alpine ridge might be exposed to a warming of more than 4.5°C in 2071–2100; this could be avoided by the moderate scenario (RCP4.5).

In large parts of Central Europe and Northern Europe annual precipitation may increase in 2071–2100 up to about 25 % and decrease in Southern Europe. For winter in this period, RCP8.5 projects strongest increases in heavy precipitation (up to 35 %) in Central and Eastern Europe. The moderate RCP4.5 scenario shows a similar pattern of changes, though less pronounced. The spatial pattern for the A1B precipitation changes qualitatively agrees with the described changes for RCP4.5 and RCP8.5, and the magnitude of the changes mostly lies in-between the two RCPs.

A small increase in the length of extended dry spells is projected for Central Europe in 2071–2100 for the moderate scenarios RCP4.5 and A1B. A decrease in the length of extended dry spells is calculated for this period in A1B for parts of Scandinavia. Under RCP8.5 more but shorter dry spells are projected in the alpine region.

Source: New high-resolution climate change projections for Europe

Photo: NASA (www.flickr.com)