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Projected changes in days with zero-crossings for Norway

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This presentation describes projected changes in the number of days with zero-crossings (DZCs) for Norway, that is, a day where the maximum temperature exceeds 0 °C and the minimum temperature drops below 0 °C, as an example of how the Norwegian Centre for Climate Services disseminates climate information to various user groups. Changes in DZCs have been requested by several user groups in Norway, for instance by agriculture and the transport sector.
A cold bias was detected in the regional climate model ensemble for Norway (here: EURO-CORDEX), which highlighted the need for bias-adjusting temperature fields before analyses. This is important for any index that is dependent on a fixed temperature threshold, not only the given index DZCs.
Gridded projections of changes in DZCs were produced for the period 2071–2100 relative to 1971–2000 under RCP4.5 and RCP8.5, at a 1 × 1 km resolution. The projections have been made publicly available at the Norwegian Centre for Climate Services' website https://klimaservicesenter.no. Results show that in regions and seasons that are mild, the number of DZCs is thus projected to decrease. This decrease was found for lowland regions in spring and coastal regions in winter. In regions and seasons that are cold, the number of DZCs is projected to give more frequent crossings of the 0 °C threshold. This increase was found for inland regions in winter and the northernmost county, Finnmark, in spring. Thus, more frequent icing of the snowpack is expected in Finnmark. This information can be used by the transport sector (e.g. winter road maintenance) and agriculture (e.g. reindeer herders) in the relevant regions. The Norwegian Centre for Climate Services disseminates information through fact-sheets, web-based maps and downloadable files.