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1.5°C, 2°C, and 3°C global warming: detection of European regions affected by multiple changes

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Assessing multiple climatic and non-climatic variables affecting one region at the same time is a crucial aspect to support climate adaptation action. We will present a method to display relevant measures of any three adaptation relevant parameters (or optionally their projected future changes) at once on a map by allocating them to multiple transparency levels of the three primary colors of additive color mixing (red, green, and blue). These parameters can e.g. be a combination of projected changes of climatic parameters and climatic parameters of today's climate and of societal/economic values such as population density or critical/vulnerable infrastructure. In addition, for the projected climatic parameters, a simulation agreement level is introduced into the figures to account for the robustness and bandwidth of the projection ensemble and to highlight regions of very high confidence in the projected changes together with regions of medium or small confidence. The overlay of information allows the combined assessment of the regional exposures. The method will be demonstrated by examples based on the EURO-CORDEX ensemble of regional climate projections analyzed for 1.5°C, 2°C and 3°C global warming periods.