



The sea-level legacy of the Paris Agreement and the effect of delayed mitigation action

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Sea-level rise is a major consequence of climate change that will continue long after emissions of greenhouse gases have stopped. The 2015 Paris Agreement aims at reducing climate-related risks by reducing greenhouse gas emissions to net zero and limiting global-mean temperature increase. Here we quantify the effect of these constraints on global sea-level rise until 2300 including Antarctic ice-sheet instabilities. We estimate median sea-level rise for net-zero greenhouse gas emissions and alternatively for net-zero CO₂ emissions until 2300, varying with the pathway of emissions during this century. Temperature stabilization below 2°C is insufficient to stabilize sea-level rise until 2300. Our year-2300 sea level estimates are sensitive to the delay in near-term peaking of CO₂ emissions. This is in particular true for our upper-end estimates due to the possibility of increased ice-sheet sensitivity for increasing temperatures. Our results underline the importance of near-term mitigation action for limiting long-term sea-level rise risks.