



The Paris Agreement's imprint on 2300 sea level rise

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The 2015 Paris Agreement aims at reducing climate-related risks by putting a limit to global mean temperature increase. Furthermore, global greenhouse gas emissions should peak as soon as possible and reach net-zero in the second half of the 21st century under the agreement. Sea level rise is one of the major impacts of climate change and will continue for long after emissions have ceased. Here we quantify the effect of near-term and long-term emissions constraints of the Paris Agreement on climate-driven sea level rise until 2300 using a contribution-based methodology that is consistent with the IPCC AR5 sea level estimates.

We study median sea level rise for scenarios stabilizing global mean temperatures between 1.5° C and 2° C above pre-industrial levels and net-zero greenhouse gas emission scenarios that lead to declining temperatures. Once global mean temperatures pass 1.5 °C, sea level rise below one meter until 2300 is out of reach for temperature stabilization scenarios. Net-zero emissions can reduce sea level rise caused by temperature overshoot only within limits. By linking sea level rise to near-term mitigation action, we find that delayed near-term mitigation action leads to increased sea level rise far beyond 2100.