Supplement of

UKESM1.1: development and evaluation of an updated configuration of the UK Earth System Model

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1 Introduction

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2 Figures

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Figure S10: Global mean sea ice extent anomalies 2070-2100 mean minus 1850-1900 mean for SSP126 and SSP370. UKESM1.0 is in blue and UKESM1.1 in red. Thick lines are the respective three member ensemble means and the thin lines are the individual ensemble members. 5-year running means have been applied in all cases.
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3 Tables

Table S1: Values for the short-wave snow metric\(^a\) used in the tuning of the snow burial of vegetation parameter, \(n_{lai\_exposed}\). The metric is calculated for both atmosphere-only (AMIP) and coupled historical simulations.

<table>
<thead>
<tr>
<th>Model</th>
<th>AMIP (W m(^{-2}))</th>
<th>Historical (W m(^{-2}))</th>
</tr>
</thead>
<tbody>
<tr>
<td>UKESM1</td>
<td>53.1</td>
<td>54.3</td>
</tr>
<tr>
<td>UKESM1.1</td>
<td>48.1</td>
<td>47.9</td>
</tr>
<tr>
<td>Observed range</td>
<td></td>
<td>50.5-53.6</td>
</tr>
</tbody>
</table>

\(^a\) Defined as the DJF mean clear-sky outgoing SW radiation at TOA over land between 30° N-60° N.