

Model Metadata for ZECMIP

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ECS = Effective Climate Sensitivity

TCR = Transient Climate Response

TCRE = Transient Climate Response to Cumulative CO₂ Emissions

PI Temp = Preindustrial Global Average Temperature

R 2XCO₂ = Radiative forcing from doubling atmospheric CO₂ concentration

T Cease = 20 year global average temperature centred about year emission cease in type-A experiment, computed from the corresponding 1pctCO₂ experiment.

N Cease = 20 year global average ocean heat uptake cantered about year emission cease in type-A experiment, computed from the corresponding 1pctCO₂ experiment.

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Model: ACCESS-ESM1.5

ECS: 3.9 K

TCR: 1.9 K

TCRE: 1.87 K EgC⁻¹

PI TEMP: 287.6 K

R 2XCO₂: 2.86 Wm⁻²

1pct start at branch or year 0?: Branch

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm ⁻²) |
|--------------------------|-----------|-------------|----------------|-------------|-----------------------------|
| A1:esm-1pct-brch-1000PgC | Y | 68 | 100 | 289.467 | 1.0925 |
| A2:esm-1pct-brch-750PgC | Y | 54 | 100 | 288.987 | 0.8185 |
| A3:esm-1pct-brch-2000PgC | Y | 116 | 100 | 291.112 | 1.823 |

Model: Bern3D-LPX-ECS-2K

ECS: 1.65 K

TCR: 1.22 K

TCRE: 1.19 K EgC⁻¹

PI TEMP: 287.47 K

R 2XCO₂: 3.71 Wm⁻²

1pct start at branch or year 0?: Year 0

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|----------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| A1: <i>esm-1pct-brch-1000PgC</i> | Y | 1918.5 | 1000 | 288.66 | 1.27670445 |
| A2: <i>esm-1pct-brch-750PgC</i> | Y | 1905.5 | 1000 | 288.41 | 1.104516146 |
| A3: <i>esm-1pct-brch-2000PgC</i> | Y | 1959.5 | 1000 | 289.50 | 1.71531328 |
| B1: <i>esm-bell-1000PgC</i> | Y | NA | 1000 | | |
| B2: <i>esm-bell-750PgC</i> | Y | NA | 1000 | | |
| B3: <i>esm-bell-2000PgC</i> | Y | NA | 1000 | | |

Model: Bern3D-LPX-ECS-3K

ECS: 2.57 K

TCR: 1.58 K

TCRE: 1.54 K EgC⁻¹

PI TEMP: 287.60 K

R 2XCO2: 3.71 Wm⁻²

1pct start at branch or year 0?: Year 0

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|----------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| A1: <i>esm-1pct-brch-1000PgC</i> | Y | 1918.5 | 1000 | 289.14 | 1.755 |
| A2: <i>esm-1pct-brch-750PgC</i> | Y | 1905.5 | 1000 | 288.78 | 1.482 |
| A3: <i>esm-1pct-brch-2000PgC</i> | Y | 1960.5 | 1000 | 290.32 | 2.393 |
| B1: <i>esm-bell-1000PgC</i> | Y | NA | 1000 | | |
| B2: <i>esm-bell-750PgC</i> | Y | NA | 1000 | | |
| B3: <i>esm-bell-2000PgC</i> | Y | NA | 1000 | | |

Model: Bern3D-LPX-ECS-5K

ECS: 5.27 K

TCR: 2.17 K

TCRE: 2.22 K EgC⁻¹

PI TEMP: 287.68 K

R 2XCO2: 3.71 Wm⁻²

1pct start at branch or year 0?: Year 0

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 1919.5 | 1000 | 289.90 | 2.454 |
| <i>A2:esm-1pct-brch-750PgC</i> | Y | 1906.5 | 1000 | 289.39 | 2.078 |
| <i>A3:esm-1pct-brch-2000PgC</i> | Y | 1962.5 | 1000 | 291.81 | 3.543 |
| <i>B1:esm-bell-1000PgC</i> | Y | NA | 1000 | | |
| <i>B2:esm-bell-750PgC</i> | Y | NA | 1000 | | |
| <i>B3:esm-bell-2000PgC</i> | Y | NA | 1000 | | |

Model: CanESM5

ECS: 5.7 K

TCR: 2.8 K

TCRE: 2.27 K EgC⁻¹

PI TEMP: 13.28 °C

R 2XCO2: 3.35 Wm⁻²

1pct start at branch or year 0?: Branch

| Experiment | Complete? | Branch Year | Length (years) | T Cease (°C) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|---------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 1911 | 100 | 15.55 | 1.475 |
| <i>A3:esm-1pct-brch-2000PgC</i> | Y | 1947 | 100 | 17.39 | 2.145 |

Model: CESM2

TCR: 2.0 K

TCRE: 1.99 K EgC⁻¹

PI TEMP: 287.15 K

1pct start at branch or year 0?: Branch

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 68 | 150 | 289.14 | 1.59 |

Model: CNRM-ESM2-1

ECS: 4.55 K (4.84 K full years)

TCR: 1.92 K

TCRE: 1.9

PI TEMP: 286.71 K

R 2XCO2: 3.23 Wm⁻²

1pct start at branch or year 0?: Branch

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 1920 | 100 | 288.61 | 1.978 |

Model: CLIMBER2

ECS: 2.8 K

TCR: 1.83 K

TCRE: 1.71 K EgC⁻¹

PI TEMP: 287.12 K

R 2XCO2: 3.71 Wm⁻²

1pct start at branch or year 0?: Branch

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 1917 | 100 | 288.83 | |

Model: DCESS

ECS: 3.11

TCR: 2.02

TCRE: 2.05

PI TEMP: 15.08 °C

R 2XCO2: 3.71

1pct start at branch or year 0?: Year 0

| Experiment | Complete? | Branch Year | Length (years) | T Cease (°C) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|---------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 1833.65 | 1000 | 17.13 | 1.863 |
| <i>A2:esm-1pct-brch-750PgC</i> | Y | 1820.40 | 1000 | 16.65 | 1.614 |
| <i>A3:esm-1pct-brch-2000PgC</i> | Y | 1874.40 | 1000 | 18.26 | 2.441 |

Model: GFDL-ESM2M

ECS: 2.4 K

TCR: 1.4 K

TCRE: 1.2 K EgC⁻¹

PI TEMP: 286.94 K

R 2XCO2: 3.55 Wm⁻²

1pct start at branch or year 0?: Year 0

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 1922 | 500 | 288.14 | 0.869 |
| <i>A2:esm-1pct-brch-750PgC</i> | Y | 1910 | 500 | 287.91 | 0.764 |
| <i>A3:esm-1pct-brch-2000PgC</i> | Y | 1961 | 500 | 289.08 | 1.575 |
| <i>B1:esm-bell-1000PgC</i> | Y | NA | 500 | | |
| <i>B2:esm-bell-750PgC</i> | Y | NA | 500 | | |
| <i>B3:esm-bell-2000PgC</i> | Y | NA | 500 | | |

Model: IAPRAS

ECS: 2.18 K

TCR: 1.5 K

TCRE: 1.45 K EgC⁻¹

PI TEMP: 286.4 K

R 2XCO2: 3.7 Wm⁻²

1pct start at branch or year 0?: Year 0

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 69 | 1000 | 287.85 | 1.090 |
| <i>A2:esm-1pct-brch-750PgC</i> | Y | 56 | 1000 | 287.46 | 1.060 |
| <i>A3:esm-1pct-brch-2000PgC</i> | Y | 109 | 1000 | 289.06 | 1.152 |
| <i>B1:esm-bell-1000PgC</i> | Y | NA | 1000 | | |
| <i>B2:esm-bell-750PgC</i> | Y | NA | 1000 | | |
| <i>B3:esm-bell-2000PgC</i> | Y | NA | 1000 | | |

Model: LOVECLIM 1.2

ECS: 2.8 K

TCR: 1.53 K

TCRE: 1.43 K EgC⁻¹

PI TEMP: 16.03 °C

R 2XCO2: 3.71 Wm⁻²

1pct start at branch or year 0?: Year 0

| Experiment | Complete? | Branch Year | Length (years) | T Cease (°C) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|---------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 1920 | 1150 | 17.46 | 2.73 |
| <i>A2:esm-1pct-brch-750PgC</i> | Y | 1905 | 1150 | 17.06 | 2.29 |
| <i>B1:esm-bell-1000PgC</i> | Y | NA | 1150 | | |

Model: MESM

ECS: 2.87 K

TCR: 1.78 K

TCRE: 1.73 K EgC⁻¹

PI TEMP: 13.30 °C

R 2XCO2: 4.11 Wm⁻²

1pct start at branch or year 0?: Year 0

| Experiment | Complete? | Branch Year | Length (years) | T Cease (°C) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|---------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 69 | 1200 | 15.03 | 1.8 |
| <i>A2:esm-1pct-brch-750PgC</i> | Y | 57 | 1200 | 14.65 | 1.515 |
| <i>A3:esm-1pct-brch-2000PgC</i> | Y | 111 | 1200 | 16.58 | 2.809 |
| <i>B1:esm-bell-1000PgC</i> | Y | NA | 1200 | | |
| <i>B2:esm-bell-750PgC</i> | Y | NA | 1200 | | |
| <i>B3:esm-bell-2000PgC</i> | Y | NA | 1200 | | |

Model: MIROC-ES2L

ECS: 2.7 K

TCR: 1.5 K

TCRE: 1.3 K EgC⁻¹

PI TEMP: 288.14 K

R 2XCO2: 4.05 Wm⁻²

1pct start at branch or year 0?: Branch

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 1913 | 210 | 289.45 | 1.639 |
| <i>A2:esm-1pct-brch-750PgC</i> | Y | 1901 | 210 | 289.17 | 1.292 |
| <i>A3:esm-1pct-brch-2000PgC</i> | Y | 1954 | 210 | 290.67 | 2.590 |

Model: MIROC-lite-LCM

ECS: 1.74 K

TCR: 1.16 K

TCRE: 1.06 K EgC⁻¹

PI TEMP: 285.08 K

R 2XCO₂: 2.97 Wm⁻²**1pct start at branch or year 0?:** Branch

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm ⁻²) |
|----------------------------------|-----------|-------------|----------------|-------------|-----------------------------|
| A1: <i>esm-1pct-brch-1000PgC</i> | Y | 66 | 1200 | 286.14 | 1.040 |
| A2: <i>esm-1pct-brch-750PgC</i> | Y | 54 | 1200 | 285.92 | 0.9163 |
| A3: <i>esm-1pct-brch-2000PgC</i> | Y | 106 | 1200 | 286.88 | 1.408 |
| B1: <i>esm-bell-1000PgC</i> | Y | | 1200 | | |
| B2: <i>esm-bell-750PgC</i> | Y | | 1200 | | |
| B3: <i>esm-bell-2000PgC</i> | Y | | 1200 | | |

Model: MPIESM

ECS: 2.83 K

TCR: 1.82 K

TCRE: 1.63 K EgC⁻¹

PI TEMP: 286.715 K

R 2XCO₂: 4.10 Wm⁻²**1pct start at branch or year 0?:** Branch

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm ⁻²) |
|----------------------------------|-----------|-------------|----------------|-------------|-----------------------------|
| A1: <i>esm-1pct-brch-1000PgC</i> | Y | 1915 | 100 | 288.34 | 1.581 |

Model: NorESM2

ECS: 3.1 K

TCR: 1.48 K

TCRE: 1.4 K EgC⁻¹

PI TEMP: 287.62 K

R 2XCO2: 2.4 Wm⁻²

1pct start at branch or year 0?: Branch

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|----------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| A1: <i>esm-1pct-brch-1000PgC</i> | Y | 67 | 100 | 289.0245 | 0.99 |
| B1: <i>esm-bell-1000PgC</i> | Y | | 200 | | |
| B3: <i>esm-bell-2000PgC</i> | Y | | 200 | | |

Model: PLASIM-GENIE

ECS: 3.4 K

TCR: 1.7 K

TCRE: 1.56 K EgC⁻¹

PI TEMP: 286.8 K

R 2XCO2: 4.2 Wm⁻²

1pct start at branch or year 0?: Year 0

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|----------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| A1: <i>esm-1pct-brch-1000PgC</i> | Y | 64 | 1100 | 288.36 | 1.874 |
| A2: <i>esm-1pct-brch-750PgC</i> | Y | 51 | 1100 | 288.01 | 1.602 |
| A3: <i>esm-1pct-brch-2000PgC</i> | Y | 104 | 1100 | 289.47 | 3.052 |
| B1: <i>esm-bell-1000PgC</i> | Y | NA | 1100 | | |
| B2: <i>esm-bell-750PgC</i> | Y | NA | 1100 | | |
| B3: <i>esm-bell-2000PgC</i> | Y | NA | 1100 | | |

Model: UKESM1

ECS: 5.4

TCR: 2.8 K

TCRE: 2.6 K EgC⁻¹

PI TEMP: 286.5 K

R 2XCO2: 4.02 Wm⁻²

1pct start at branch or year 0?: Branch

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 1917 | 100 | 289.17 | 1.853 |
| <i>A2:esm-1pct-brch-750PgC</i> | Y | 1904 | 100 | 288.59 | 1.418 |
| <i>A3:esm-1pct-brch-2000PgC</i> | Y | 1962 | 100 | 291.58 | 2.758 |

Model: UVic ESCM 2.10

ECS: 3.70 K

TCR: 1.87 K

TCRE: 1.82 K EgC⁻¹

PI TEMP: 286.59 K

R 2XCO2: 4.07 Wm⁻²

1pct start at branch or year 0?: Year 0

| Experiment | Complete? | Branch Year | Length (years) | T Cease (K) | N Cease (Wm⁻²) |
|---------------------------------|------------------|--------------------|-----------------------|--------------------|----------------------------------|
| <i>A1:esm-1pct-brch-1000PgC</i> | Y | 1918 | 1000 | 288.41 | 2.62 |
| <i>A2:esm-1pct-brch-750PgC</i> | Y | 1905 | 1000 | 288.00 | 2.21 |
| <i>A3:esm-1pct-brch-2000PgC</i> | Y | 1963 | 1000 | 290.07 | 3.98 |
| <i>B1:esm-bell-1000PgC</i> | Y | NA | 1000 | | |
| <i>B2:esm-bell-750PgC</i> | Y | NA | 1000 | | |
| <i>B3:esm-bell-2000PgC</i> | Y | NA | 1000 | | |