

Indicators and Metrics for the Assessment of Climate Engineering

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Contents of this file

Table S1

Indicator	Climate Engineering study category and reference list number (total # of studies in each category in red in parentheses)			
	SRM	Marine CDR	Terrestrial CDR	Inter-comparison
Surface air temperature	1–46 (46)	47–51 (5)	52–62 (11)	63,64 (2)
Evaporation/evapotranspiration	7–10,13,23–25,65,66 (10)	(0)	53,55,67 (3)	(0)
Precipitation (rain, snow, etc.)	2–4,6,7,10,12,13,15,18,20–27,29–34,36,38,40–42,46,65 (31)	51 (1)	53,55,58,68,69 (5)	63 (1)
Atm. circulation or pressure	4,6,9,13,20,23,24,26,27,33, 39 (11)	51 (1)	53,55 (2)	(0)
Atmospheric CO ₂ / surface pCO ₂	1,3,12,26,46 (5)	47–50,70–79 (14)	52,54,55,58,59,61,62,69, 80 (9)	63,64,81 (3)
Atmospheric	5,13,26,29,33,36,82,83 (8)	(0)	(0)	(0)

Chemistry (ozone, aerosols, etc.)				
Energy balance (TOA), surface energy budget, or individual energy fluxes	2,5,7–11,13,15,17,20,21,23–27,32,35–39,42,46,82,84 (27)	50,51,85 (3)	54,55,58,68,69,86 (6)	63,64,81,87 (4)
Albedo (surface, TOA, or other)	10,20,23,24,35,42,88 (7)	(0)	54,55,68,69,86,89 (6)	63,81 (2)
Carbon budget (complete or indiv. reservoirs)	12,28,46 (3)	48,50,77,90 (4)	54,55,58,59,61,67,68,80,91 (9)	63 (1)
Sea ice	6,10,15,16,18,23–25,27,30,32,33,35,37,40,46 (16)	(0)	55,57,60 (3)	63 (1)
Ocean temperature	46,92 (2)	50,93 (2)	53 (1)	(0)
Ocean physics and circulation (MOC, ENSO, etc.)	15,27,37,46 (4)	50,93 (2)	60 (1)	63 (1)
Sea Level	44,45 (2)	(0)	(0)	87 (1)
Ocean biogeochemistry (omega, DIC, ALK, etc.)	28,46,92 (3)	47–50,73,75–79,85,93 (12)	(0)	63 (1)
Ocean pH	3,28,46 (3)	47,49,73,77–79,94,95 (8)	(0)	63 (1)
Ocean C uptake or outgassing flux	46 (1)	48,49,51,70,74,76,77,85,90,93,94 (11)	80 (1)	63 (1)
NPP in ocean	46 (1)	75,76,93,94 (4)	(0)	63 (1)
Land C uptake or loss flux	46 (1)	48–50 (3)	52,58,67,68,80,89,91,96 (8)	63 (1)
NPP on land	7,10,18,22,34,36,38,46,66 (9)	(0)	53,67 (2)	63 (1)
Soil processes (quality, moisture, etc.)	22,43,46,66 (4)	(0)	55,67,89 (3)	63 (1)

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