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Annex VIII: Acronyms

This annex should be cited as:

IPCC, 2021: Annex VIII: Acronyms. In *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 2257–2266.

20CR	20th Century Reanalysis	AO	Arctic Oscillation
A1B	Special Report on Emissions Scenarios A1B scenario	AOD	aerosol optical depth
AABW	Antarctic bottom water	AOGCM	atmosphere–ocean general circulation model
AAIW	Antarctic intermediate water	AP	Antarctic Peninsula
AAO	Antarctic Oscillation	AQ	air quality
abrupt4xCO2	Scenario with abrupt quadrupling of the atmospheric concentration of carbon dioxide	AR	atmospheric river
ACC	Antarctic Circumpolar Current	AR4	IPCC Fourth Assessment Report
ACCESS	Australian Community Climate and Earth System Simulator	AR5	IPCC Fifth Assessment Report
ACCMIP	Atmospheric Chemistry and Climate Model Intercomparison Project	AR6	IPCC Sixth Assessment Report
ACE	Accumulated Cyclone Energy	ARO	Arctic Ocean
AED	atmospheric evaporative demand	ARP	Arabian Peninsula
AerChemMIP	Aerosols and Chemistry Model Intercomparison Project	ARS	Arabian Sea
AeroCom	Aerosol Comparisons between Observations and Models project	ASE	Amundsen Sea Embayment
AERONET	Aerosol Robotic Network	AUS	Australasia
AEW	African Easterly Wave	AusMCM	Australian–Maritime Continent monsoon
AF	airborne fraction of CO ₂	AVHRR	Advanced Very High Resolution Radiometer
AFOLU	agriculture, forestry and other land use	AZM	Atlantic Zonal Modes
AFR	Africa	BC	black carbon
AGAGE	Advanced Global Atmospheric Gases Experiment	BCE	Before the Common Era
AGCM	atmospheric global climate model	BCP	biological carbon pump
AGFP	absolute global forcing potential	BE	Berkeley Earth
AGR/ECOL	agriculture and ecological droughts	BECCS	bioenergy with carbon capture and storage
AGTP	absolute global temperature change potential	BOB	Bay of Bengal
AGWP	absolute global warming potentials	BP	before the present
AIRS	Atmospheric Infrared Sounder	BrC	brown carbon
AIS	Antarctic Ice Sheet	BSISO	boreal summer intra-seasonal oscillation
ALL	all forcings	BU	bottom up
ALT	active layer thickness	BVOC	biogenic volatile organic compound
AMIP	Atmospheric Model Intercomparison Project	C3S	Copernicus Climate Change Service
AMM	Atlantic Meridional Mode	C4MIP	Coupled Climate Carbon Cycle Model Intercomparison Project
AMMA	African Monsoon Multidisciplinary Analyses	CAF	Central Africa
AMO	Atlantic Multi-decadal Oscillation	CAM	Central America
AMOC	Atlantic Meridional Overturning Circulation	CAMS	Copernicus Atmosphere Monitoring Service
AMSU	Advanced Microwave Sounding Unit	CanESM2	Canadian Earth System Model version 2
AMV	Atlantic Multi-decadal Variability	CanESM5	Canadian Earth System Model version 5
		CAPE	convective available potential energy
		CAR	Caribbean
		CAU	Central Australia
		CCM	chemistry–climate model

CCMI	Chemistry–Climate Modelling Initiative	CORDEX	Coordinated Regional Climate Downscaling Experiment
CCN	cloud condensation nuclei	COSMO	Consortium for Small-scale Modeling
CCS	carbon dioxide capture and storage	COVID-19	coronavirus disease of 2019
CCT	cirrus cloud thinning	CP	Central Pacific
CD	cooling degree days	CPM	convection-permitting model
CDD	consecutive dry days	CRA	climate risk and adaptation assessment
CDR	carbon dioxide removal	CRE	cloud radiative effect
CDRMIP	Carbon Dioxide Removal Model Intercomparison Project	CRM	cloud resolving model
CDW	Circumpolar Deep Water	CRU	Climate Research Unit
CE	Common Era	CRUTEM	Climatic Research Unit gridded global historical near-surface air temperature dataset
CEDS	Community Emissions Data System	CRUTS	Climatic Research Unit gridded time-series dataset
CERES	Clouds and the Earth’s Radiant Energy System	CSIRO	Commonwealth Scientific and Industrial Research Organisation
CESM	Community Earth System Model	DACCS	direct air carbon capture with carbon storage
CFCs	chlorofluorocarbons	DAMIP	Detection and Attribution Model Intercomparison Project
CFMIP	Cloud Feedback Model Intercomparison Project	DCPP	Decadal Climate Prediction Project
CFSR	Climate Forecast System Reanalysis	DECK	Diagnostic, Evaluation and Characterization of Klima
CGTP	combined global temperature change potential	DeepMIP	Deep-Time Model Intercomparison Project
CH₄	methane	DF	drought frequency
CICERO	Center for International Climate and Environment Research	DGVM	dynamic global vegetation model
CID	climatic impact-driver	DI	Drought Index
CISM2	Community Ice Sheet Model 2	DIC	dissolved inorganic carbon
CLLJ	Caribbean low-level jet	DJF	December–January–February
CLSAT	China Land Surface Air Temperature	DJFM	December–January–February–March
CMAP	NOAA Climate Prediction Center Merged Analysis of Precipitation	DMS	dimethyl sulphide
CMIP	Coupled Model Intercomparison Project	DTR	diurnal temperature range
CMIP3	Coupled Model Intercomparison Project Phase 3	DU	Dobson Units
CMIP5	Coupled Model Intercomparison Project Phase 5	EAIS	East Antarctic Ice Sheet
CMIP6	Coupled Model Intercomparison Project Phase 6	EAN	East Antarctica
CNA	Central North America	EAO	Equatorial Atlantic Ocean
CNRM	Centre National de la Recherche Météorologique	EAS	East Asia
CO	carbon monoxide	EAsiaM	East Asian monsoon
CO₂	carbon dioxide	EASM	East Asian summer monsoon
CO₂-eq	carbon dioxide equivalent	EAU	Eastern Australia
COBE	Centennial in situ Observation-Based Estimates of Sea Surface Temperature	EAWM	East Asian winter monsoon
		EBAF	CERES Energy Balanced and Filled climate data record

EBM	Energy Balance Model	ESM	Earth system model
EBUS	Eastern boundary upwelling systems	ESMValTool	Earth System Model Evaluation Tool
ECMWF	European Centre for Medium-Range Weather Forecasts	ESRL	NOAA Earth System Research Laboratory
ECS	equilibrium climate sensitivity	ESWL	extreme still water levels
ECV	Essential Climate Variable	ET	evapotranspiration
ECWL	Extreme Coastal Water Level	ETC	extratropical cyclone
EDW	elevation-dependent warming	ETCCDI	Expert Team on Climate Change Detection and Indices
EEOC	Early Eocene Climatic Optimum	ETWL	Extreme Total Water Level
EEU	Eastern Europe	EU	European Union
EgC	exagrams of carbon (1000 petagrams of carbon)	FaIR	Finite Amplitude Impulse Response simple climate model
EIO	Equatorial Indian Ocean	FAIR	Findable, Accessible, Interoperable and Reusable principles
EMIC	Earth models of intermediate complexity	FAPAR	fraction of absorbed photosynthetically active radiation
ENA	Eastern North America	FAR	IPCC First Assessment Report
ENSO	El Niño–Southern Oscillation	FD	frost days
EOF	empirical orthogonal function	FESOM	Finite Element Sea ice/Ice Shelf Ocean Model
EOV	Essential Ocean Variable	FFDI	Forest Fire Danger Index
EP	Eastern Pacific	FOLU	forestry and other land use
EPA	USA Environmental Protection Agency	fsST	fixed-sea surface temperature
EPO	Equatorial Pacific Ocean	GCM	general circulation model or global climate model
EqAmer	equatorial America	GCOS	Global Climate Observing System
ERA-Interim	ECMWF global reanalysis	GCP	Global Carbon Project
ERA20C	ECMWF 20th century reanalysis	GDD	growing degree days
ERA20CM	ECMWF 20th century atmospheric model ensemble	GDP	gross domestic product
ERA5	ECMWF global reanalysis (replaces ERA-Interim)	GeoMIP	Geoengineering Model Intercomparison Project
ERF	effective radiative forcing	GFCS	Global Framework for Climate Services
ERFaci	effective radiative forcing due to aerosol–cloud interactions	GFDL	NOAA Geophysical Fluid Dynamics Laboratory
ERFari	effective radiative forcing due to in aerosol–radiation interactions	GHCN	NOAA Global Historical Climatology Network
ERSST	Extended Reconstructed Sea Surface Temperature	GHCNd	NOAA Global Historical Climatology Network daily database
ESA	European Space Agency	GHCnv4	NOAA Global Historical Climatology Network monthly database version 4
ESA CCI	European Space Agency Climate Change Initiative	GHG	greenhouse gas
ESAF	East Southern Africa	GHM	global hydrological model
ESB	East Siberia	GIA	glacial isostatic adjustment
ESGF	Earth System Grid Federation	GIC	Greenland/Iceland
ESL	extreme sea level	GISS	NASA Goddard Institute for Space Studies

Acronyms

GISTEMP	NASA Goddard Institute for Space Studies Surface Temperature Analysis	HI	heat index
GlacierMIP	Glacier Model Intercomparison Project	HighResMIP	High Resolution Model Intercomparison Project
GLDAS	Global Land Data Assimilation System	HKH	Hindu Kush Himalaya
GloGEM	Global Glacier Evolution Model	HNO₃	nitric acid
GM	Global monsoon	IAGOS	In-service Aircraft for a Global Observing System
GMMIP	Global Monsoons Model Intercomparison Project	IAM	integrated assessment model
GMSL	global mean sea level	ICE	initial condition ensemble
GMST	global mean surface temperature	ICESat	Ice, Cloud and land Elevation Satellite
GMTSL	global mean thermosteric sea level	ICOADS	International Comprehensive Ocean–Atmosphere Data Set
GNSS	Global Navigation Satellite System	IMBIE	Ice Sheet Mass Balance Intercomparison Exercise
GOME	Global Ozone Monitoring Experiment	INP	ice nucleating particle
GOSAT	Greenhouse Gases Observing Satellite	IOB	Indian Ocean Basin
GPCC	Global Precipitation Climatology Centre	IOD	Indian Ocean Dipole
GPCP	Global Precipitation Climatology Project	IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
GPM	Global Precipitation Mission	IPCC	Intergovernmental Panel on Climate Change
GPS	Global Positioning System	IPO	Inter-decadal Pacific Oscillation
GRACE	Gravity Recovery and Climate Experiment	IPSL	Institut Pierre-Simon Laplace
GRD	gravitational, rotational and deformational	IRF	instantaneous radiative forcing
GrIS	Greenland Ice Sheet	IRFaci	Instantaneous radiative forcing (or effect) due to aerosol-cloud interactions
GSAT	global surface air temperature	IRFari	Instantaneous radiative forcing (or effect) due to aerosol–radiation interactions
GSMaP	Global Satellite Mapping of Precipitation dataset	ISIMIP	Inter-Sectoral Impact Model Intercomparison Project
GtC	gigatonnes of carbon	ITCZ	Inter-tropical Convergence Zone
GtCO₂	gigatonnes of carbon dioxide	ITF	Indonesian throughflow
GTP	global temperature change potential	JAS	July–August–September
GWL	global warming level	JAXA	Japan Aerospace Exploration Agency
GWP	global warming potential	JJA	June–July–August
HadCRUT	Hadley Centre Climatic Research Unit gridded surface temperature dataset	JJAS	June–July–August–September
HadEX3	Hadley Centre gridded land surface extremes indices	JMA	Japan Meteorological Agency
HadGEM	Hadley Centre Global Environment Model	JRA-55	Japanese 55-year Reanalysis
HadISST	Hadley Centre Ice and Sea Surface Temperature dataset	LAI	leaf area index
HadSST	Hadley Centre Sea Surface Temperature dataset	LAP	light-absorbing particle
HC	Hadley circulation	LARMIP	Linear Antarctic Response Model Intercomparison Project
HCFC	hydrochlorofluorocarbon	LDT	Last deglacial transition
HD	heating degree days		
HFC	hydrofluorocarbon		

LEO	low Earth orbit	MODIS	Moderate Resolution Imaging Spectroradiometer
LGM	Last Glacial Maximum	MPI	Max Planck Institute for Meteorology
LIG	Last Interglacial	MPWP	mid-Pliocene Warm Period
LLGHG	long-lived greenhouse gas	MRI	Meteorological Research Institute, Japan Meteorological Agency
LLHI	Low-likelihood, high-impact	MSD	midsummer drought
LNO_x	lightning NO _x	MTRF	maximum technically feasible reductions
LR	lapse rate	N₂O	nitrous oxide
LSAT	land surface air temperature	NADW	North Atlantic Deep Water
LUC	land-use change	NAM	Northern Annular Mode
LULUCF	land use, land-use change and forestry	NAmerM	North American monsoon
LW	longwave	NAO	North Atlantic Oscillation
LWP	liquid water path	NARCCAP	North American Regional Climate Change Assessment Program
LWS	land-water storage	NASA	USA National Aeronautics and Space Administration
MAGICC	Model for the Assessment of Greenhouse Gas Induced Climate Change	NASH	North Atlantic Subtropical High
MAM	March–April–May	NAU	Northern Australia
MAT	marine air temperature	NBP	Net Biome Productivity
MCB	marine cloud brightening	NCA	Northern Central America
MCO	Miocene Climatic Optimum	NCAR	National Center for Atmospheric Research
MCS	mesoscale convective system	NCEI	NOAA National Centers for Environmental Information
MDG	Madagascar	NCEP	NOAA National Centers for Environmental Prediction
MED	Mediterranean	NDC	Nationally Determined Contribution
MENA	Middle East North Africa	NDD	number of dry days
MERRA	Modern-Era Retrospective Analysis for Research and Applications	NDVI	Normalized Difference Vegetation Index
METACLIP	Metadata for climate products project	NEAF	North Eastern Africa
MH	mid-Holocene	NEN	North-Eastern North America
MHW	marine heatwave	NES	North-Eastern South America
MICI	marine ice cliff instability	NEU	Northern Europe
MIP	Model Intercomparison Project	NH	Northern Hemisphere
MIROC	Model for Interdisciplinary Research on Climate	NH₃	ammonia
MIS	Marine Isotope Stage	NH₄	ammonium
MISI	marine ice sheet instability	NMAT	nighttime marine air temperature
MISMIP	Marine Ice Sheet Model Intercomparison Projects	NM VOC	non-methane volatile organic compound
MJO	Madden–Julian Oscillation	NO₂	nitrogen dioxide
MLO	Mauna Loa Observatory	NO₃	nitrate
MME	multi-model ensemble	NOAA	USA National Oceanic and Atmospheric Administration
MOC	meridional overturning circulation		

NOAAGlobalTemp	NOAA Merged Land Ocean Global Surface Temperature Analysis	POA	primary organic aerosols
NorESM	Norwegian Earth System Model	PP	primary production
NO_x	nitrogen oxides	PSS-78	Practical Salinity Scale 1978
NPO	North Pacific Ocean	QBO	quasi-biennial oscillation
NPP	net primary production	RAR	Russian Arctic Region
NSA	Northern South America	RCM	regional climate model
NWN	North-Western North America	RCMIP	Reduced Complexity Model Intercomparison Project
NWS	North-Western South America	RCP	Representative Concentration Pathway
NZ	New Zealand	RF	radiative forcing
OA	organic aerosols	RFC	Reasons for Concern
OC	organic carbon	RFE	Russian Far East
ODS	ozone depleting substances	RFMIP	Radiative Forcing Model Intercomparison Project
OECD	Organisation for Economic Co-operation and Development	RH	relative humidity
OH	hydroxyl radical	RICH	Radiosonde Innovation Composite Homogenization
OHC	ocean heat content	RKR	Representative Key Risk
OLR	outgoing longwave radiation	RO	radio occultation
OLS	ordinary least squares	RSL	relative sea level
OMI	Ozone Monitoring Instrument	RSLR	relative sea level rise
OMIP	Ocean Model Intercomparison Project	SAH	Sahara
PA	Paris Agreement	SAI	stratospheric aerosol injection
PAGES 2K	Past Global Changes 2k consortium	SAM	Southern Annular Mode
PC	principal component	SAmerM	South American monsoon
pCO₂	partial pressure of CO ₂	SAO	South Atlantic Ocean
PDO	Pacific Decadal Oscillation	SAOD	stratospheric aerosol optical depth
PDSI	Palmer Drought Severity Index	SAR	IPCC Second Assessment Report
PDV	Pacific Decadal Variability	SARF	stratospheric-temperature-adjusted radiative forcing
PERSIANN-CDR	Precipitation estimations from Remotely Sensed Information using Artificial Neural Networks Climate Data Record	SAS	South Asia
PETM	Paleocene–Eocene Thermal Maximum	SAsiaM	South and South East Asian monsoon
PgC	petagrams of carbon	SAT	surface air temperature
PgCeq	petagrams of carbon equivalent	SAU	Southern Australia
PlioMIP	Pliocene Model Intercomparison Project	SCA	Southern Central America
PM	particulate matter	SCE	snow cover extent
PM₁₀	particulate matter with diameter of less than 10 microns	ScenarioMIP	Scenario Model Intercomparison Project
PM_{2.5}	particulate matter with diameter of less than 2.5 microns	SCM	simple climate model
PMIP	Paleoclimate Modelling Intercomparison Project	SDG	Sustainable Development Goals
		SEA	South East Asia
		SEAF	South Eastern Africa

SED	Structured Expert Dialogue	SSP	Shared Socio-economic Pathways
SEJ	Structured Expert Judgement	SST	sea surface temperature
SES	South-Eastern South America	SSW	sudden stratospheric warming
SF₆	sulphur hexafluoride	STE	stratosphere–troposphere exchange
SH	Southern Hemisphere	SW	shortwave
SIA	sea ice area	SWE	snow water equivalent
SIDS	Small Island Developing States	SWS	South-Western South America
SIE	sea ice extent	SWV	stratospheric water vapour
SLCF	short-lived climate forcer	TAR	IPCC Third Assessment Report
SLE	sea level equivalent	TAV	Tropical Atlantic Variability
SLP	sea level pressure	TC	tropical cyclone
SLR	sea level rise	TCR	transient climate response
SMAP	Soil Moisture Active Passive	TCRE	transient climate response to cumulative CO ₂ emissions
SMB	surface mass balance	TCWV	total column water vapour
SMILE	single-model initial-condition large ensemble	Tg	teragrams
SO₂	sulphur dioxide	ThSL	thermsteric sea level
SO₄²⁻	sulphate	TIB	Tibetan Plateau
SOA	secondary organic aerosols	TNn	annual minimum daily minimum temperature
SOI	Southern Oscillation Index	TNx	annual maximum daily minimum temperature
SON	September–October–November	TOA	the net top-of-the-atmosphere
SOO	Southern Ocean	ToE	time of emergence
SO_x	sulphur oxides	TPI	tripole Index
SPCZ	South Pacific Convergence Zone	TRMM	Tropical Rainfall Measuring Mission
SPEI	Standardized Precipitation Evapotranspiration Index	TS	Technical Summary
SPI	Standardized Precipitation Index	TSI	total solar irradiance
SPM	Summary for Policymakers	UAH	University of Alabama in Huntsville
SPO	South Pacific Ocean or South Pole Observatory	UHI	urban heat island
SR1.5	IPCC Special Report on Global Warming of 1.5°C	UN	United Nations
SRCLL	IPCC Special Report on Climate Change and Land	UNEP	United Nations Environment Programme
SRES	IPCC Special Report on Emissions Scenarios	UNFCCC	United Nations Framework Convention on Climate Change
SREX	IPCC Special Report on Managing the Risk of Extreme Events and Disasters to Advance Climate Change Adaptation	UTLS	upper troposphere and lower stratosphere
SRI	Standardized Runoff Index	UV	ultraviolet
SRM	solar radiation modification	UVic ESCM	University of Victoria Earth System Climate Model
SROCC	IPCC Special Report on the Ocean and Cryosphere in a Changing Climate	VLM	vertical land motion
SSA	Southern South America	VOC	volatile organic compounds
		VPD	vapour pressure deficit
		VSLs	very short-lived halogenated species

Acronyms

WAF	Western Africa
WafriM	West African monsoon
WAIS	West Antarctic Ice Sheet
WAN	West Antarctica
WBC	western boundary current
WBGT	wet bulb globe temperature
WC	Walker circulation
WCA	West Central Asia
WCE	Western and Central Europe
WCRP	World Climate Research Programme
WG	IPCC Working Group
WHO	World Health Organization
WMGHG	well-mixed greenhouse gas
WMO	World Meteorological Organization
WNA	Western North America
WNP	Western North Pacific
WOA18	World Ocean Atlas 2018
WSAF	West Southern Africa
WSB	Wilkes Subglacial Basin
WUE	water-use efficiency
YJ	yottajoule, 10^{24} joules
ZEC	zero emissions commitment
ZJ	zettajoule, 10^{21} joules

