

EARTH SCIENCES DIVISION ACRONYMS & ABBREVIATIONS

3-D—three dimensional	CDE—convection dispersion equation
ACRF—Atmospheric Radiation Measurement Climate Research Facility (U.S. Southern Great Plains)	CDWR—California Department of Water Resources'
ADE—advection dispersion equation	CEC—California Energy Commission
AGU—American Geophysical Union	CF—certification framework
AHG—anterior hindgut	CFD—Computational Fluid Dynamics
ALS—Advanced Light Source (Berkeley Lab)	CLASIC—Cumulus-Land Surface Interaction Campaign
ANN—artificial neural networks	CLM—Community Land Model
AOGCM—Atmosphere-Ocean General Circulation Model	CLR—CO ₂ leakage risk
APS—Advanced Photon Source (Argonne National Laboratory)	CO ₂ —carbon dioxide
ARM—Atmospheric and Radiation Measurements Program	CSEGR—carbon sequestration with enhanced gas recovery
ARM-SGP—Atmospheric and Radiation Measurements Program, Southern Great Plains (USA)	CSEM—controlled source electromagnetic
AVA—amplitude versus angles	CTRW—continuous-time random-walk
BNL—Brookhaven National Laboratory	DCE—dichloroethylene
BTC—breakthrough curve(s)	DECOVALEX—DEvelopment of COupled THM models and their VALidation against Experiments (an international cooperative project related to nuclear waste disposal)
BUD—Berkeley Unexploded-ordnance Discriminator	DIC—dissolved inorganic carbon
BWC—Berkeley Water Center	DIRB—dissimilatory iron-reducing bacteria
C2VSIM—California Central Valley Simulation Model	DLS—dynamic light scattering
CASSM—continuous-active-source seismic monitoring	DoD—U.S. Department of Defense
CCP—CO ₂ Capture Project	DOE—U.S. Department of Energy
CCS—carbon dioxide capture and storage	EC—eddy covariance
CDAT—climate data analysis tool	ECA—emission credits and atmosphere
	EGS—enhanced geothermal systems

EM—electromagnetic	GLUE—generalized likelihood uncertainty estimate
EPA—U.S. Environmental Protection Agency	GPR—ground-penetrating radar
ERDAS—Earth Resources Data Analysis System	GPS—global positioning system
ERSD—Environmental Remediation Sciences Division	GTL—Genomes to Life (DOE)
ERSP—Environmental Remediation Sciences Program	HBS—hydrate-bearing sediments
ERT—electrical resistance tomography	HMR—hydrocarbon and mineral resources
ESTCP—Environmental Security Technology Certification Program (DoD)	HRCTM—hydrogen release compound (a slow-release polylactate compound)
ESTSC—Energy Science and Technology Software Center (DOE)	HSE—health, safety, and environment(al)
EXAFS—extended x-ray absorption fine structure spectroscopy	IP—induced polarization (bioremediation)
FEP—features, events, and processes	IPCC—Intergovernmental Panel on Climate Change
FFEC—flowing fluid electric conductivity	ITS—internal transcribed spacer
FG—foregut	JAEA—Japan Atomic Energy Agency
FGA—functional gene array	JIP—Joint Industry Program
FRC—Field Research Center (ERSD-ORNL)	JJAS—June through September (June, July, August, September)
FTIR—Fourier transform infrared	JOI—Joint Oceanographic Institutions, Inc.
GCS—geologic carbon sequestration; Geologic Carbon Sequestration Program (ESD)	LAI—leaf area index
GCM—general circulation models (climate)	LB—lattice-Boltzmann
GeoSeq—Geologic Carbon Sequestration Project (long-term carbon sequestration project led by ESD)	LDRD—Laboratory Directed Research and Development (Berkeley Lab)
GFDL—Geophysical Fluid Dynamics Laboratory climate model (NOAA)	MCMC—Markov-chain Monte Carlo
GhG—greenhouse gas	MDA—multiple displacement amplification
GHSZ—gas-hydrate stability zone	METI—Ministry of Economy, Trade, and Industry (Japan)
GISAXS—grazing incidence small-angle x-ray scattering	MG—midgut
	MEQ—micro-earthquake

MPI—message passing interface	PCAP—Protein Complex Analysis Project
MSA—multiple sequence alignment	PCE—perchloroethylene
MSU—Montana State University	PCM—Parallel Climate Model
MTBE—methyl tert-butyl ether	PCR—polymerase chain reaction
NASA—National Aeronautic and Space Administration	PDF (pdf)— probability density function
NCAR—National Center for Atmospheric Research	PHG—posterior hindgut (PHG)
NERSC—National Energy Research Scientific Computing Center (Berkeley Lab)	PI—principal investigator
NETL—National Energy Technology Laboratory	P-E—precipitation-effectiveness
NCDC—National Climatic Data Center	PIER—Public Interest Energy Research
NCEP—National Center for Environmental Prediction	PM—particulate matter
NEE—net ecosystem exchanges	PNNP—Pacific Northwest National Laboratory
NOAA—National Oceanic & Atmospheric Administration (U.S.)	PSO—particle swarm optimization
NSF—National Science Foundation	QM—quantum mechanical
NLSL—National Synchrotron Light Source (BNL)	REU—Research Experiences for Undergraduates
NTA—nitrylotriacetate	RCMs—regional climate models
NUMO—Nuclear Waste Management Organization of Japan	RSM—Regional Spectral Model (NOAA)
OA—oriented attachment	RUC—rapid update cycle
OC—organic carbon	SAO—Santa Ana Occurrence
OCRWM—Office of Civilian Radioactive Waste Management (DOE)	SAXS—small-angle x-ray scattering
ODP—Ocean Drilling Program (NSF)	SC—site-characterization
ORNL—Oak Ridge National Laboratory	SCCM—Single Column Climate Model (NCAR)
PA—performance assessment	SCUC—shaped-core uniaxial compression
	SEG— Society of Exploration Geophysicists



SERDP—Strategic Environmental Research and Development Program

SJR—San Joaquin River

SP—self-potential (bioremediation)

SRES—Special Report on Emission Scenarios (IPCC)

SSRL—Stanford Synchrotron Radiation Laboratory

SST—sea surface temperature

STD—soil thermal diffusion

STXM—scanning transmission x-ray microscopy

SWE—snow water equivalent

SZ—saturated zone

TAN—Test Area North (Idaho National Laboratory)

TCE—trichloroethylene

TEP—triethyl phosphate

TH—thermal-hydrological

THC—thermal-hydrological-chemical

THM—thermal-hydrological-mechanical

THMC—thermal-hydrological-mechanical-chemical

TOUGH—Transport of Unsaturated Groundwater and Heat (ESD computer code)

TSPA—Total System Performance Assessment (Yucca Mountain Project)

UCSC—University of California at Santa Cruz

UCSD—University of California at San Diego

UIC—Underground Injection Control program

UMTRA—Uranium Mill Tailings Remedial Action

USDW—underground sources of drinking water

UXO—unexploded ordnance

UZ—unsaturated zone

VIMSS—Virtual Institute for Microbial Stress and Survival

VSP—vertical seismic profiling

WAXS—wide angle x-ray scattering

WESTCARB—West Coast Regional Carbon Sequestration Partnership

WRF—Weather Research and Forecasting Model

ZERT—Zero Emissions Research and Technology Program