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Supplement of

SISALv3: a global speleothem stable isotope and trace element database

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Table S1: Definition of pre-defined choices for all fields in the SISALv3 database.

Table name	Field	Lists
site	monitoring	'yes', 'no', 'unknown'
entity	entity_status	'current', 'current partially modified', 'superseded'
entity	depth_ref	'from top', 'from base', 'not applicable'
entity	geology	'limestone', 'dolomite', 'marble', 'dolomite limestone', 'marly limestone', 'calcarenite', 'mixed (see notes)', 'other (see notes)', 'unknown'
entity	rock_age	'Holocene', 'Pleistocene', 'Pliocene', 'Miocene', 'Oligocene', 'Eocene', 'Palaeocene', 'Cretaceous', 'Jurassic', 'Triassic', 'Permian', 'Carboniferous', 'Devonian', 'Silurian', 'Ordovician', 'Cambrian', 'Precambrian', 'mixed (see notes)', 'other (see notes)', 'unknown'
entity	vegetation_type	'evergreen', 'deciduous', 'shrubland', 'grassland', 'sparse', 'barren', 'trees and grass', 'moorland', 'mixed (see notes)', 'other (see notes)', 'unknown'
entity	land_use	'water body', 'wetland', 'forest', 'farmland', 'pasture', 'concrete and built up', 'limited or no use', 'mixed (see notes)', 'other (see notes)', 'unknown'
entity	copernicus_lcc	'unknown', 'shrubs', 'herbaceous vegetation', 'cultivated and managed vegetation / agriculture', 'urban / built up', 'bare / sparse vegetation', 'snow and ice', 'permanent water bodies', 'herbaceous wetland', 'moss and lichen', 'closed forest, evergreen needle leaf', 'closed forest, evergreen broad leaf', 'closed forest, deciduous needle leaf', 'closed forest, deciduous broad leaf', 'closed forest, mixed', 'closed forest, other', 'open forest, evergreen needle leaf',

		'open forest, evergreen broad leaf', 'open forest, deciduous needle leaf', 'open forest, deciduous broad leaf', 'open forest, mixed', 'open forest, other', 'ocean'
entity	cover_type	'thick', 'thin', 'patchy', 'barren', 'mixed (see notes)', 'other (see notes)', 'unknown'
entity	host_rock_trace_elements	'yes', 'no', 'other (see notes)', 'unknown'
entity	drip_water_trace_elements	'yes', 'no', 'other (see notes)', 'unknown'
entity	speleothem_type	'stalagmite', 'composite', 'stalactite', 'flowstone', 'mixed (see notes)', 'other (see notes)', 'unknown'
entity	drip_type	'seepage flow', 'seasonal drip', 'fast flow', 'mixed (see notes)', 'other (see notes)', 'unknown'
entity	d13C	'yes', 'no', 'unknown'
entity	d18O	'yes', 'no', 'unknown'
entity	iso_std	'PDB', 'Vienna-PDB', 'unknown'
entity	d18O_water_equilibrium	'yes', 'no', 'other (see notes)', 'unknown'
entity	organics	'yes', 'no', 'other (see notes)', 'unknown'
entity	fluid_inclusions	'yes', 'no', 'other (see notes)', 'unknown'
entity	mineralogy_petrology_fabric	'yes', 'no', 'other (see notes)', 'unknown'
entity	clumped_isotopes	'yes', 'no', 'other (see notes)', 'unknown'
entity	noble_gas_temperatures	'yes', 'no', 'other (see notes)', 'unknown'
entity	C14	'yes', 'no', 'other (see notes)', 'unknown'
entity	ODL	'yes', 'no', 'other (see notes)', 'unknown'
entity	Sr_Ca	'yes', 'no', 'other (see notes)', 'unknown'
entity	Sr_Ca_method	'solution ICP-MS', 'solution OES-MS', 'solution ICP-AES', 'synchroton XRF', 'micro XRF', 'micro XRF (ITRAX)', 'LA-ICP-MS', 'LA-ICP-AES', 'SIMS', 'Electron

		Microprobe (EPMA)', 'TIMS', 'other (see notes)', 'unknown'
entity	Sr_Ca_std	'NIST SRM 610', 'NIST SRM 612', 'NIST SRM 614', 'CaCO3 (NIST SRM 915a), SrCO3 (NIST SRM 987)', 'MACS-1', 'MACS-3', 'standard stock solutions of known concentrations', 'multi-element standards pre-calibrated by Merck etc.', 'Japanese coral standard JCP-1 doped with single element standards of known concentrations', 'metal standards', 'other (see notes)', 'unknown'
entity	Sr_Ca_downsampled	'No-not applicable', 'No-aliquots of same powder used for stable isotope and trace element measurements', 'No-but different powders used for stable isotope and trace element measurements', 'Yes-author downsampled', 'Yes-SISAL downsampled', 'other (see notes)', 'unknown'
entity	Sr_Ca_downsampling_method	'running average/mean', 'linear interpolation', 'NESTool – kernel based downsampling', 'IgorPro – linear smoothing splines', 'IgorPro – interpolation', 'Binned average', 'Savitzky-Golay filter', 'Gaussian kernel', 'Loess', 'Lowess', 'MATLAB – interpolation', 'other (see notes)', 'unknown'
entity	Mg_Ca	'yes', 'no', 'other (see notes)', 'unknown'
entity	Mg_Ca_method	'solution ICP-MS', 'solution OES-MS', 'solution ICP-AES', 'synchroton XRF', 'micro XRF', 'micro XRF (ITRAX)', 'LA-ICP-MS', 'LA-ICP-AES', 'SIMS', 'Electron Microprobe (EPMA)', 'TIMS', 'other (see notes)', 'unknown'
entity	Mg_Ca_std	'NIST SRM 610', 'NIST SRM 612', 'NIST SRM 614', 'CaCO3 (NIST SRM 915a), SrCO3 (NIST SRM 987)', 'MACS-1', 'MACS-3',

		'standard stock solutions of known concentrations', 'multi-element standards pre-calibrated by Merck etc.', 'Japanese coral standard JCP-1 doped with single element standards of known concentrations', 'metal standards', 'other (see notes)', 'unknown'
entity	Mg_Ca_downsampled	'No-not applicable', 'No-aliquots of same powder used for stable isotope and trace element measurements', 'No-but different powders used for stable isotope and trace element measurements', 'Yes-author downsampled', 'Yes-SISAL downsampled', 'other (see notes)', 'unknown'
entity	Mg_Ca_downsampling_method	'running average/mean', 'linear interpolation', 'NESTool – kernel based downsampling', 'IgorPro – linear smoothing splines', 'IgorPro – interpolation', 'Binned average', 'Savitzky-Golay filter', 'Gaussian kernel', 'Loess', 'Lowess', 'MATLAB – interpolation', 'other (see notes)', 'unknown'
entity	Ba_Ca	'yes', 'no', 'other (see notes)', 'unknown'
entity	Ba_Ca_method	'solution ICP-MS', 'solution OES-MS', 'solution ICP-AES', 'synchroton XRF', 'micro XRF', 'micro XRF (ITRAX)', 'LA-ICP-MS', 'LA-ICP-AES', 'SIMS', 'Electron Microprobe (EPMA)', 'TIMS', 'other (see notes)', 'unknown'
entity	Ba_Ca_std	'NIST SRM 610', 'NIST SRM 612', 'NIST SRM 614', 'CaCO3 (NIST SRM 915a), SrCO3 (NIST SRM 987)', 'MACS-1', 'MACS-3', 'standard stock solutions of known concentrations', 'multi-element standards pre-calibrated by Merck etc.', 'Japanese coral standard JCP-1 doped with single element standards of known

		concentrations', 'metal standards', 'other (see notes)', 'unknown'
entity	Ba_Ca_downsampled	'No-not applicable', 'No-aliquots of same powder used for stable isotope and trace element measurements', 'No-but different powders used for stable isotope and trace element measurements', 'Yes-author downsampled', 'Yes-SISAL downsampled', 'other (see notes)', 'unknown'
entity	Ba_Ca_downsampling_method	'running average/mean', 'linear interpolation', 'NESTool – kernel based downsampling', 'IgorPro – linear smoothing splines', 'IgorPro – interpolation', 'Binned average', 'Savitzky-Golay filter', 'Gaussian kernel', 'Loess', 'Lowess', 'MATLAB – interpolation', 'other (see notes)', 'unknown'
entity	U_Ca	'yes', 'no', 'other (see notes)', 'unknown'
entity	U_Ca_method	'solution ICP-MS', 'solution OES-MS', 'solution ICP-AES', 'synchroton XRF', 'micro XRF', 'micro XRF (ITRAX)', 'LA-ICP-MS', 'LA-ICP-AES', 'SIMS', 'Electron Microprobe (EPMA)', 'TIMS', 'other (see notes)', 'unknown'
entity	U_Ca_std	'NIST SRM 610', 'NIST SRM 612', 'NIST SRM 614', 'CaCO3 (NIST SRM 915a), SrCO3 (NIST SRM 987)', 'MACS-1', 'MACS-3', 'standard stock solutions of known concentrations', 'multi-element standards pre-calibrated by Merck etc.', 'Japanese coral standard JCP-1 doped with single element standards of known concentrations', 'metal standards', 'other (see notes)', 'unknown'
entity	U_Ca_downsampled	'No-not applicable', 'No-aliquots of same powder used for stable isotope and trace element

		measurements', 'No-but different powders used for stable isotope and trace element measurements', 'Yes-author downsampled', 'Yes-SISAL downsampled', 'other (see notes)', 'unknown'
entity	U_Ca_downsampling_method	'running average/mean', 'linear interpolation', 'NESTool – kernel based downsampling', 'IgorPro – linear smoothing splines', 'IgorPro – interpolation', 'Binned average', 'Savitzky-Golay filter', 'Gaussian kernel', 'Loess', 'Lowess', 'MATLAB – interpolation', 'other (see notes)', 'unknown'
entity	P_Ca	'yes', 'no', 'other (see notes)', 'unknown'
entity	P_Ca_method	'solution ICP-MS', 'solution OES-MS', 'solution ICP-AES', 'synchroton XRF', 'micro XRF', 'micro XRF (ITRAX)', 'LA-ICP-MS', 'LA-ICP-AES', 'SIMS', 'Electron Microprobe (EPMA)', 'TIMS', 'other (see notes)', 'unknown'
entity	P_Ca_std	'NIST SRM 610', 'NIST SRM 612', 'NIST SRM 614', 'CaCO3 (NIST SRM 915a), SrCO3 (NIST SRM 987)', 'MACS-1', 'MACS-3', 'standard stock solutions of known concentrations', 'multi-element standards pre-calibrated by Merck etc.', 'Japanese coral standard JCP-1 doped with single element standards of known concentrations', 'metal standards', 'other (see notes)', 'unknown'
entity	P_Ca_downsampled	'No-not applicable', 'No-aliquots of same powder used for stable isotope and trace element measurements', 'No-but different powders used for stable isotope and trace element measurements', 'Yes-author downsampled', 'Yes-SISAL

		downsampled', 'other (see notes)', 'unknown'
entity	P_Ca_downsampling_method	'running average/mean', 'linear interpolation', 'NESTool – kernel based downsampling', 'IgorPro – linear smoothing splines', 'IgorPro – interpolation', 'Binned average', 'Savitzky-Golay filter', 'Gaussian kernel', 'Loess', 'Lowess', 'MATLAB – interpolation', 'other (see notes)', 'unknown'
entity	Sr_isotopes	'yes', 'no', 'other (see notes)', 'unknown'
entity	Sr_isotopes_method	'solution ICP-MS', 'solution OES-MS', 'solution ICP-AES', 'synchroton XRF', 'micro XRF', 'micro XRF (ITRAX)', 'LA-ICP-MS', 'LA-ICP-AES', 'SIMS', 'Electron Microprobe (EPMA)', 'TIMS', 'other (see notes)', 'unknown'
entity	Sr_isotopes_std	'NIST SRM 610', 'NIST SRM 612', 'NIST SRM 614', 'CaCO3 (NIST SRM 915a), SrCO3 (NIST SRM 987)', 'MACS-1', 'MACS-3', 'standard stock solutions of known concentrations', 'multi-element standards pre-calibrated by Merck etc.', 'Japanese coral standard JCP-1 doped with single element standards of known concentrations', 'metal standards', 'other (see notes)', 'unknown'
entity	trace_elements_datafile	'yes', 'no'
entity	trace_elements_metadatafile	'yes', 'no'
entity	cave_map	'yes', 'no'
entity	entity_scan	'yes', 'no'
gap	gap	'G'
hiatus	hiatus	'H'
original_chronology	age_model_type	'linear', 'linear between dates', 'polynomial fit', 'polynomial fit omitting outliers', 'Bayesian', 'Bayesian Bacon', 'Bayesian Bchron', 'StalAge', 'StalAge and other', 'Clam', 'COPRA', 'OxCal', 'mixed (see notes)', 'other (see notes), 'unknown'

original_chronology	ann_lam_check	'14C peak', '14C slope', 'U/Th cycle', 'trace element cycle', 'assumed', 'not applicable', 'other (see notes)', 'unknown'
original_chronology	dep_rate_check	'yes', 'no', 'assumed', 'not applicable', 'unknown'
sample	mineralogy	'calcite', 'secondary calcite', 'aragonite', 'vaterite', 'organic', 'mixed (see notes)', 'other (see notes)', 'unknown'
sample	arag_corr	'yes', 'no', 'not applicable', 'unknown'