**Time**

DateTimePoint:

date=

time=

DateTimeRange:

dateStart=

dateEnd=

TimeDuration

(Second, Minute, Day, Week, Month, Year, Decade, Century, Spring, Summer,

Autumn, Winter, VegetationPeriod) (+modifyer)

TimeResolution

(Second, Minute, Day, Week, Month, Year, Decade, Century, Spring, Summer,

Autumn, Winter, VegetationPeriod) (+modifyer)

**Space (refers to study, project, data set)**

Location (name it\*)

Country Andorra, United Arab Emirates, … list\*)

Continent (Africa, Asia, Europe, North America, Oceania, South America, Antarctica\*)

BoundingBox

Elevation

Elevation

Spatial extent

(cat\*: Point < m^2, Plot m^2 – 0.01 km^2, Region 0.01 km^2 - 10,000 km^2, Continent 10,000 km2 - 100,000,000 km^2, Global)

Spatial resolution (cat\*: Point, Plot, Region, Continent, Global, Defined as with extent)

**Method**

Methodological approach (cat\*:

 Virtual experiment[[1]](#footnote-2)

 Controlled experiment[[2]](#footnote-3) (experimental lab system, factors fully controlled)

 Field experiment[[3]](#footnote-4) (experimental field system, factors mostly controlled)

 Field manipulation (natural system, with single factor manipulation)

 Observational experiment[[4]](#footnote-5) (plot selection creates factor gradients)

 Observation[[5]](#footnote-6))

Spatial dependency[[6]](#footnote-7) (cat\*:  independent,  partially dependent,  fully dependent)

Control factors (Experimental Manipulation EM □ / Covariate Assessment CA) (cat\* Biotic (subcat\*

* Biotic
* Species
* SpeciesComposition
* SpeciesDiversity
* SpeciesEveness
* SpeciesRichness
* Occurance (Presents/Absence)
* LivingStatus
* Abundance
* Individual
* Diameter
* Weight
* Height
* Quantity
* Density
* Occurance
* LivingStatus
* Abundance
* Tolerance
* Functions
* FunctionalRichness
* FunctionalDiversity
* Genetics
* GeneticDiversity
* GeneticManipulation
* Phylogenetics
* PhylogeneticDistictness
* PhylogeneticDistance
* PhylogenticDiversity
* Community
* CommunityStructure
* CommunityDynamics
* Abiotic
* Chemistry
* CationExchange
* ChemicalDiversity
* ChemicalComposition
* ChemicalActivity
* Nutrients
* pH-Value
* Xenobiotics
* Radiation
* Intensity
* Absorbance
* Reflectance
* Radiance
* Irradiance
* PhotosynteticallyActiveRadiation
* Soil
* SoilDepth
* SoilColour
* OrganicMatter
* Moisture
* Structure
* RootIntensity
* SoilBase
* SoilTemperature
* GrainSize
* Air
* AirTemperatur
* WindDirection
* WindSpeed
* AirPressure
* Water
* Precipitation
* Evaporation
* GroundWaterFlow
* SurfaceRunOff
* Sublimation
* Humitity
* VapourPressure
* Space
* Scale
* SpatialContext
* Distance
* Time
* Scale
* TemporalContext
* Age
* Frequency
* Disturbance
* Harvest
* Consumption
* Pathogen
* Fire
* Wind
* AbioticStress
* StressTolerance
* Topography
* Elevation
* Inclination == Slope
* Exposition
* Aspect

**Sphere**

* Biosphere
* Phytosphere
* TreeLayer
* ShrubLayer
* HerbLayer
* MossLayer
* Rhizosphere
* Zoosphere
* Pedosphere
* SoilType
* SoilWithThickOrganicLayer
* SoilWithStrongHumanInfluence
* SoilWithLimitationToRootGrowth
* SoilDistinguishedByFeAlChemicstry
* SoilWithPronouncedAccumulationOfOrganicMatterInMineralTopsoil
* SoilWithAccumulationOfModeratelySolubleSaltsOrNonSalineSubstances
* SoilWithClayEnrichedSubsoil
* SoilWithLittleOrNoProfileOrientation
* SoilHorizon
* O
* A
* E
* B
* C
* R
* L
* Atmosphere
* Troposphere
* Stratosphere
* Mesosphere
* Ionosphere
* Hydrosphere
* Aquasphere
* Oceanosphere
* Limnosphere
* Cryosphere
* FrozenSoil
* FrozenWater
* TerrestrialWaterVapor
* Lithosphere
* Crust
* UpperMantle

**Biome**

BiomeType

* Terrestrial
  + - * PermanentWetland
      * SeasonalWetland
      * Dryland
* Aquatic
* Freshwater
* BrackishWater
* SalineWater
* Ecotone

* LatitudinalZone
* Polar
* Boreal
* Temperate
* Subtropical
* Tropical
* Hydrology
* Humide
* Semihumide
* Semiaride
* Aride

Physiognomy

* TerrestrialPhysignomy
* Forrest
* EvergreenNeedleleaf
* EvergreenBroadleaf
* DecidiousBroadleaf
* Mixed
* OpenWoodland
* Savannah
* WoodySavannah
* Shrubland
* ClosedShrubland
* OpenShrubland
* HerbaceousSystem
* Grassland
* BarrenLand
* Dessert
* AquaticPhysiognomy
* LakeZones
* Epilimnon
* Metalimnon
* Hypolimnon
* RiverZones
* Crenon
* Rithron
* Potamon
* MarineZones
* LittoralZone
* IntertidalZone
* Estuaries
* KelpForests
* CoralReefs
* OceanBanks
* ContinentalShelf
* NeriticZone
* Straits
* PelagicZone
* OceanicZone
* Seamounts
* HydrothermalVents
* ColdSeeps
* DemersalZone
* BenthicZone

LandUse

* Natural
* SemiNatural
* Agricultural
* Agroforestry
* Aquaculture
* Urban
* NonVegetated
* Vegetated

**Organism**

OrganismName (CommonName=, ScientificName=)

TaxonomicalClassification

* Species
* Genus
* Family
* Order
* Class
* Phylum
* Kingdom
* Domain

OrganismLifeForm

* PlantLifeForm
* Hydrophytes
* Helophyte
* Cryptophytes
* Hemicryptophytes
* Chamaephytes
* Phanerophytes
* Epiphytes
* AnimalLifeForm (eusozial, presozial, solitaries)
* Homöothermes
* Heterothermes
* Poikliothermes
* MicroorganismLifeForm
* Bacteria
* Archae
* Protists
* Viruses
* MycotaLifeform
* MulticellularMycota
* UnicellularMycota

OrganismSize (nm, µm, mm, cm, m)

* MinimumSize
* MaximumSize
* SizeClasses
* FaunaSizeClasses
* MicroFauna
* MesoFauna
* MacroFauna
* MegaFauna
* FloraSizeClasses
* MicroFlora
* MesoFlora
* MacroFlora
* MycotaSizeClasses
* Micromycetes
* Macromycetes

**Chemical**

ChemicalElement (Periodic System Of Elements)

ChemicalIsotope (...)

CompoundName

ChemicalCompound

* Inorganic
* MetallsAndAlloys
* ElementaryMetalls
* AlloysOfAluminium
* AlloysOfBismuth
* AlloysOfChromium
* AlloysOfCobalt
* AlloysOfCopper
* AlloyOfGallium
* AlloysOfGold
* AlloysOfIndium
* AlloysOfIron
* AlloysOfLead
* AlloysOfMagnesium
* AlloysOfMercury
* AlloysOfNickel
* AlloysOfPotassium
* AlloysOfPlutonium
* RareEarthAlloys
* AlloysOfRhodium
* AlloyOfScandium
* AlloysOfSilver
* AlloysOfSodium
* AlloysOfTitanium
* AlloysOfTin
* AlloysOfUranium
* AlloysOfZinc
* AlloysOfZirconium
* SaltsAndMinerals
* Carbonates
* Halogenides
* Oxides
* Phosphates
* Silikates
* Sulfates
* Sulfides
* AcidsAndBases
* HydrogenPeroxide
* SodiumHydroxide
* PotassiumHydroxide
* CalciumHydroxide
* MagnesiumHydroxide
* AluminumHydroxide
* CarbonicAcid
* NitricAcid
* NitrousAcid
* HydrofluoricAcid
* HydrochloricAcid
* SulfuricAcid
* SulfurousAcid
* PhosphoricAcid
* PhosphorousAcid
* Gases
* Ammonia
* Carbonoxides
* Hydrocarbons
* Hydrogen
* Hydrogenhalogenides
* HydrogenSulfide
* Nitrogen
* NitrogenOxides
* Oxygen
* Sulfuroxides
* Organic
* FunctionalGroups
* Alkoholes
* Aldehydes
* Esters
* Ethers
* Ketones
* CarboxylicAcid
* Amines
* Amides
* DiazoniumSalts
* NitroCompounds
* Alkanthioles
* Sulfides
* Disulfides
* EsterOfSulfuricAcid
* Sulfones
* Sulfoxides
* Thionamides
* Thiolesters
* ThioAcids
* EsterOfOrthosphoricAcid
* Phosphines
* Metallorganiscs
* AliphaticCompounds
* Alkanes
* Alkenes
* Alkynes
* AromaticCompounds
* Arene/Annulenes
* AromaticIons
* BenzoleDerivatives
* Heterocyclics
* ArylHalides
* Biomolecules
* Nucleobases
* Nucleotides
* NucleicAcids
* AminoAcids
* Proteins
* Carbohydrates
* Lipids
* Steroids
* SekundaryMetabolites
* Polymers
* Fullerenes
* Ions
* H+
* OH-
* K+
* Ca2+
* Mg2+
* NH4-
* NO2-
* NO3-
* SO32-
* SO42-
* H2PO4-
* HPO42-
* Cl-

ChemicalSubstanceFunction

Biological Role (Antibody, Enzyme, Mineral, Nutrient, … , name it)

**Process**

ProcessName

(Adaptation, Speciation, Extinction, Birth, Growth, Death, Migration, Competition, Facilitation, Consumption, Communication, Assimilation, Dissimilation, Carbon Cycle, Nutrient Cycle, Water Cycle, Energy Exchange, Demography, Evolution, Ecosystem Process, Disruption, Forcing, Natural Disturbance, Land-Use-Change, Climate Change, Pollution, Invasion, Erosion, Deposition, Succession, Photosyntheses..name it!)

ProcessType

* TransportProcess
* Uptake
* Release
* Exchange
* Movement
* TransformationProcess
* Removal
* Addition
* Increase
* Decrease
* Transition
* Conversion
* InteractionProcess

* Biotic Interaction
* Animalia
* Plantae
* Protista
* Eubacteria
* Archaebacteria
* Mycota
* Viruses
* Abiotic Interaction
* Matter
* Energy

ServiceType (Ecosystem Services)

* SupportingService (name it)
* ProvisioningService (name it)
* RegulatingService (name it)
* CulturalService (name it)

1. Computer experiments and simulation [↑](#footnote-ref-2)
2. System and factors are mostly controlled (lab experiment, greenhouse) [↑](#footnote-ref-3)
3. Natural system is studied but certain factors are control (e.g. fertilization, soil warming, [↑](#footnote-ref-4)
4. Plots are selected to span gradients and allow analyses of system behavior [↑](#footnote-ref-5)
5. Mere observation (monitoring, sensing, survey, inventory) [↑](#footnote-ref-6)
6. Independent: fully controlled lab experiment that could take place anywhere; partially dependent: unique features of spatial context partially uncontrolled, e.g. light conditions in greenhouse, open top chambers, …, fully dependent: field studies [↑](#footnote-ref-7)