

MetaN&ts

Inference and meta-insights for microbial correlation networks

Data Structure and Management

Input Data

Primary Abundance Data

Data	SMP1	SMP2	SMP3	SMP4	SMP5	SMP6
Node1	20	32	12	12	12	12
Node2	32	24	45	45	45	45
Node3	1	4	0	0	0	0
Node4	1	9	0	0	0	0
Node5	34	23	45	45	45	45
Node6	0	0	2	2	2	2
Node7	45	54	34	34	34	34
Node8	78	67	60	60	60	60
Node9	121	232	212	212	212	212

e.g Taxonomic abundance data

Sample MetaData

Smps	CatM1	CatM2	ConM1
SMP1	Grp1	GrpA	23
SMP2	Grp1	GrpB	34
SMP3	Grp1	GrpB	21
SMP4	Grp2	GrpA	54
SMP5	Grp2	GrpA	78
SMP6	Grp2	GrpB	17

required

Node MetaData

Node	NM1	NM2	NM3
Node1	Cat1	Catx	Cata
Node2	Cat1	Catx	Cata
Node3	Cat1	Catx	Cata
Node4	Cat2	Caty	Catb
Node5	Cat2	Caty	Catb
Node6	Cat2	Catz	Catb
Node7	Cat2	Catz	Catb
Node8	Cat1	Catz	Catb
Node9	Cat1	Catz	Catb

optional

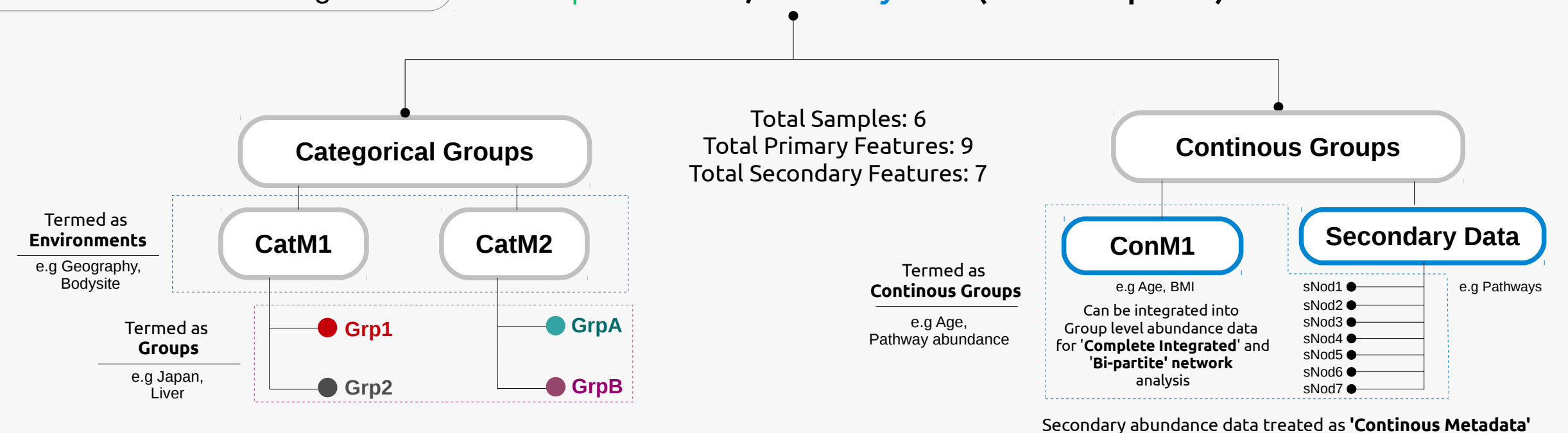
Secondary Abundance Data

Data	SMP1	SMP2	SMP3	SMP4	SMP5	SMP6
sNod1	0	2	2	2	1	21
sNod2	3	2	5	5	14	41
sNod3	4	4	0	1	10	10
sNod4	1	0	10	0	01	01
sNod5	3	2	5	4	4	47
sNod6	0	0	2	2	21	21
sNod7	4	4	14	3	3	30

e.g. Pathway abundance data, Gene expression data etc

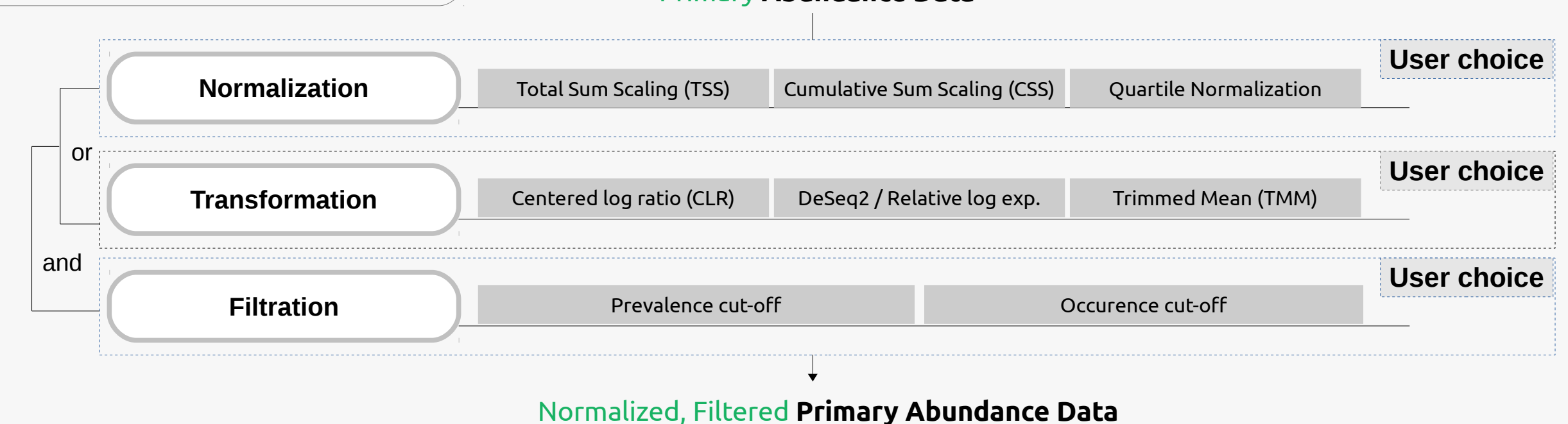
Meta Data Processing

Sample MetaData, Secondary Data (inter-omic profile)



Primary Data Processing

Primary Abundance Data



Network Methods, Dashboard, Visualizations

Network Inference Methods

Reboot/CCREPE | Sparcc | NAMAP | Classical (Pearson, Spearman) **User choice**

Dynamic change in inference method

MetaN:its Dashboard ID: 9f8a31b4 **PERSONAL DASHBOARD**

Multi-modular
 Multiple analysis And visualization Modules in the personal dashboard

Customizations
 • Layouts
 • Property mapping
 • Plot Downloads
 • Cytoscape and Gephi compatible files

Categorical Networks
 Comprehensive analysis and visualization of all Categorical networks identified through metadata

Inter-omic options
 Switch between Complete and Bi-partite Integrated inter-omic networks

Bi-partite plots
 Edges exclusively between the inter-omic data and continuous metadata groups can be visualized through highly intuitive Bi-partite plots

Searchable inter-omic data
 Search and specify inter-omic features of interest for integrating into network inference

Network Properties
 Interactive, searchable and exportable network property tables for each group of an environment

Network Properties Box Plots
 Interactive,downloadable, trend enabled, boxplots (and variants) for each network property, for each group of an environment

Network Comparison, Properties and Visualizations

VENN DIAGRAMS

Venn Diagram for networks in Geography environment

Change view mode: CLASSIC EDWARDS

Dynamically generated Venn Diagrams for Node as well as Edge composition of various network groups in an environment

Compositional Comparisons
 Compare networks of various groups within a Category of Metadata (e.g networks of all states in a given Geography), in terms of their Node and Edge composition

Number of chosen components in each Network

State	Assam	Andhra	Sikkim	Manipur	Ahmedabad
Count	98	88	72	81	94

Properties

Switch Output Type: TABLE PLOTS

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