DATA VISUALIZATION DONE RIGHT

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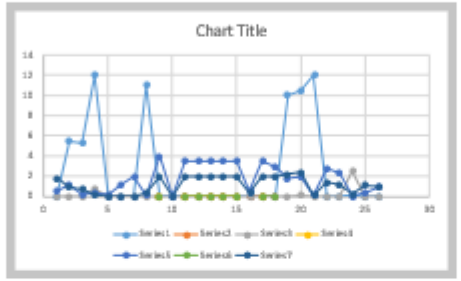
DEPARTMENT OF COMPUTER SCIENCE

Insert Chart

Recommended Charts | All Charts

- Recent
- Templates
- Column
- Line
- Pie
- Bar
- Area
- X Y (Scatter)
- Stock
- Surface
- Radar
- Treemap
- Sunburst
- Histogram
- Box & Whisker
- Waterfall
- Combo

Scatter with Straight Lines and Markers



OK | Cancel

RAU	KT	ZT	TYP	OBJEKT
62		3	806	Pfriem mit Mittelschwellung
62		3	610	Rollennadel mit säbelförmigen Schaft
62		3	212	Dolch mit 2 Nieten
62		3	212	Dolch mit 2 Nieten
62		4	212	Dolch mit 2 Nieten und Seitenrillen
62		4	212	Dolch mit 2 Nieten und Seitenrillen
66		3	806	Pfriem
66	ALT	22	104	Flachbeil
66	ALT	22	504	Blechstück
66	ALT	22	711	Gußstück
66		4	702	Ösenringbarren, Halsringkragen aus 6 Ri
66		3	702	Ösenringbarren
66		3	702	Ösenringbarren
66		3	702	Ösenringbarren
66		3	702	Ösenringbarren
66		3	702	Ösenringbarren
66		3	702	Ösenringbarren
66		3	702	Ösenringbarren
66		3	702	Ösenringbarren
66		3	702	Ösenringbarren
66		3	702	Ösenringbarren
66		3	702	Ösenringbarren
65		4	402	Ring, hohl gegossen mit Zinken
65		4	402	Ring, hohl gegossen mit Zinken
66		3	210	Stabdolch, Klinge
62		3	702	Ösenringbarren
62		3	702	Ösenringbarren
66	GBK	25	215	Griffzungendolch
62		3	603	Rollennadel, ellipt. Kopfpl. u. ger. Schaft
62		3	409	Spirale, nieder
62		3	409	Spirale, hoch
62		3	604	Scheibennadel, verziert
62		3	604	Scheibennadel, groß, verziert
62		3	702	Ösenringbarren
62		3	702	Ösenringbarren
62		3	702	Ösenringbarren
62		4	212	Dolch m. 4 Nieten u. eingezogenen Seite
62		4	616	Kugelkopfnadel
62		4	610	Rollennadel m. tordiertem Schaft
62		4	610	Rollennadel m. tordiertem Schaft
62		4	615	Ösenkopfnadel m. durchbohrtem Kopf

VBI	BI	VAU	AU	VZN	ZN	VCO	CO	VFE	FE
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	0.011		0		0		0		0
	0.005		0		0	1	0		0
	0.001		0		0		0		0.04
	0.01	0	0		0	1	0		0.03
	0.001		0		0		0		0
1	0	0	0	1	0	1	0		0.15
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9	0.002	0	0		0		0		0
9	0.009	0	0	1	0		0		0
	0.01		0		0		0		0.05
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9	0.001	0	0		0		0	1	0
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	0.002	0	0		0	3	0		0.06
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	0.06		0		0		0		0.12
	0.06		0	9	0.2		0		0.06
	0.005	2	0		0	4	0	6	0.01
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	0.07		0		0		0	6	0.01
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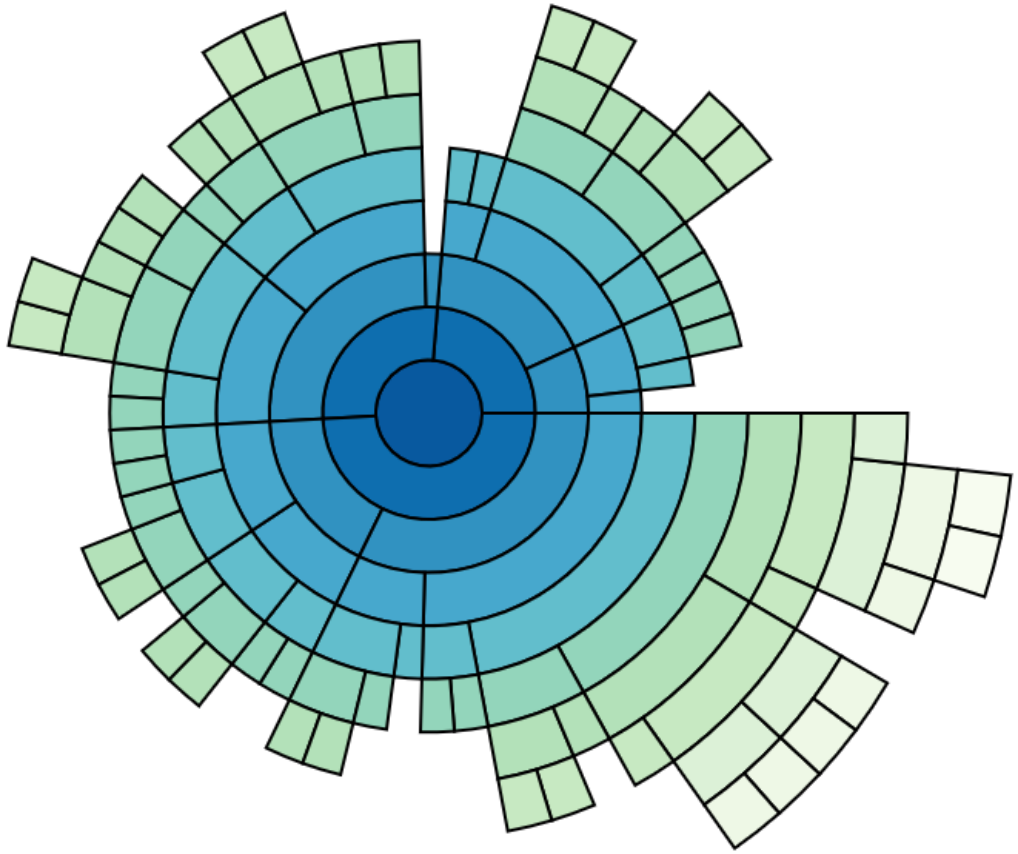
9	0.1	0	0		0		0		0.15
1	0	0	0		0		0		0.03
	0.007		0		0		0		0.2
	0.02		0		0		0		0.5
	0.02		0		0		0		0.2

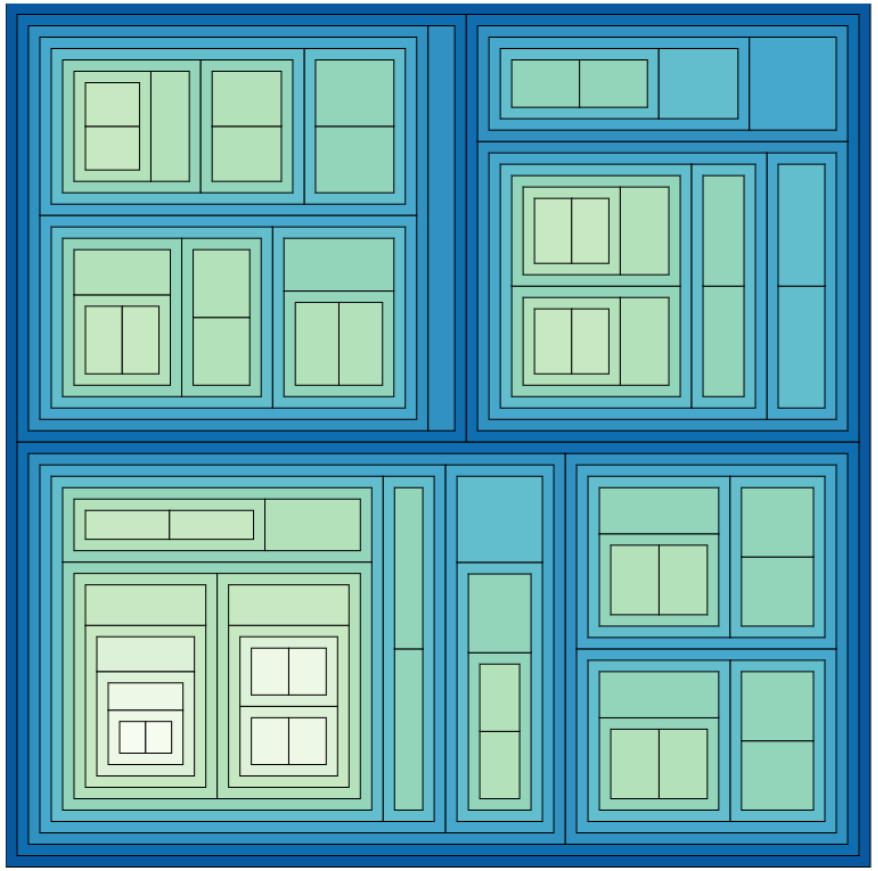
SMAP_03_99

Ready

100%

SUNBURST VS. TREEMAP





Which one is the right visualization choice?

How to cite this site?

Check out other surveys!

treevis.net - A Visual Bibliography of Tree Visualization 2.0 by Hans-Jörg Schulz

v.10-APR-2019

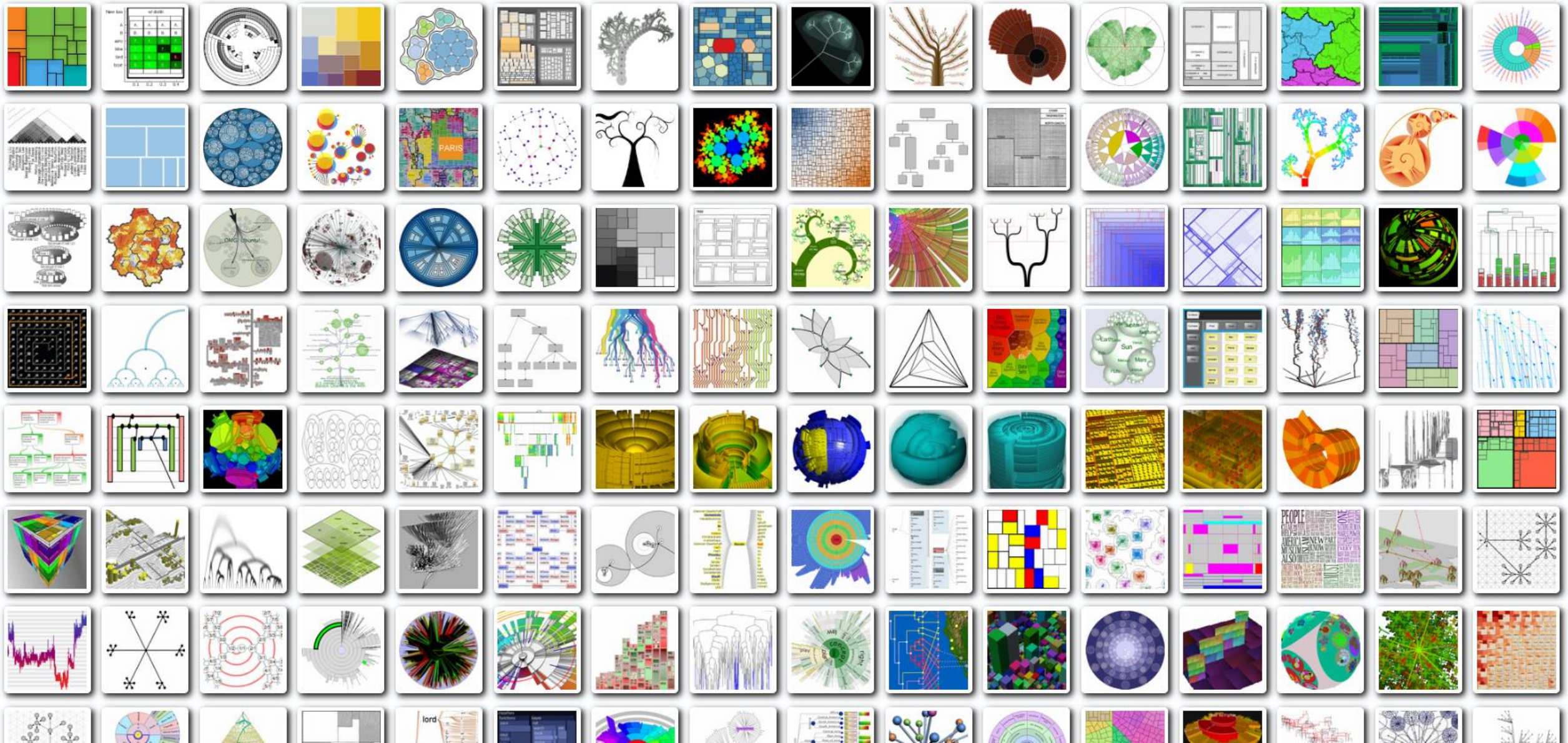
Dimensionality: All

Representation: All

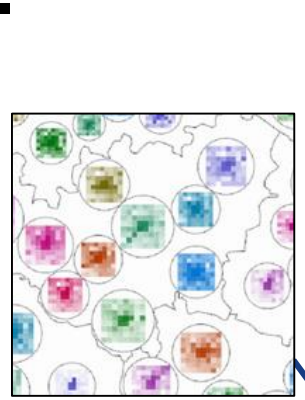
Alignment: All

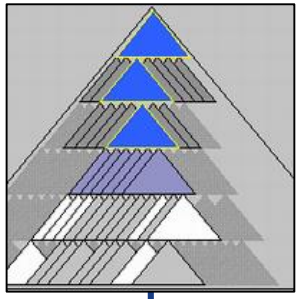
Fulltext Search

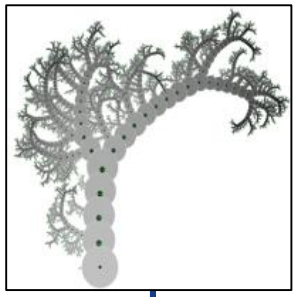
Techniques Shown: 307

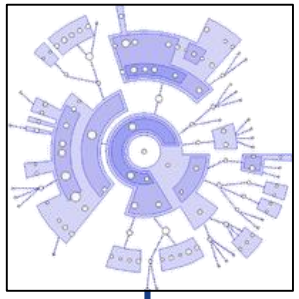


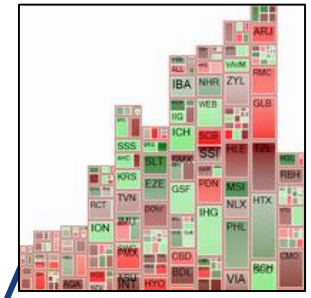
EXPRESSIVENESS: MATCHING THE DATA









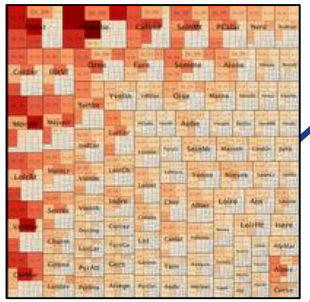


Binary Trees

Wide Trees

Deep Trees

Meta-Trees

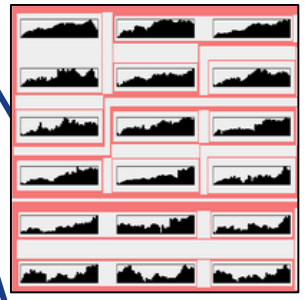


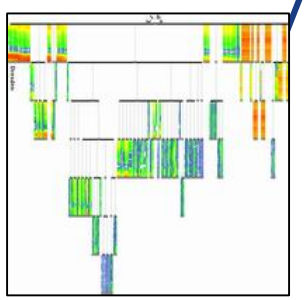
Trees w/
Spatial Data

Trees w/
Temporal Data

Trees w/
Numerical Data

Trees w/
Uncertainty



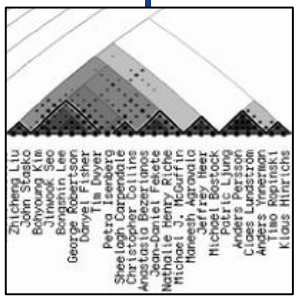


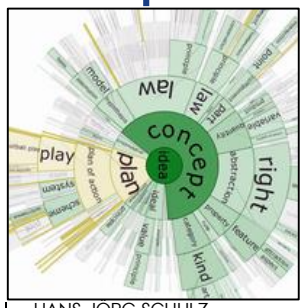
Dendrograms

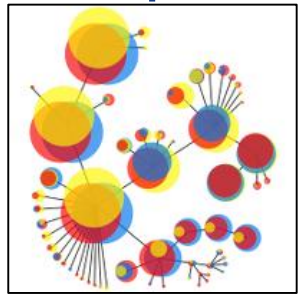
Trees w/
Image Data

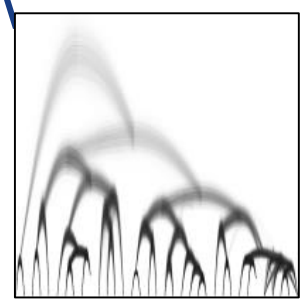
Trees w/
Textual Data

Trees w/
Set-typed Data

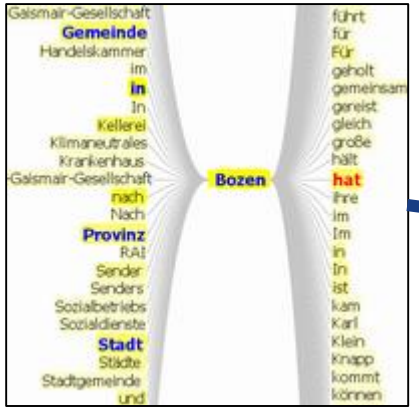


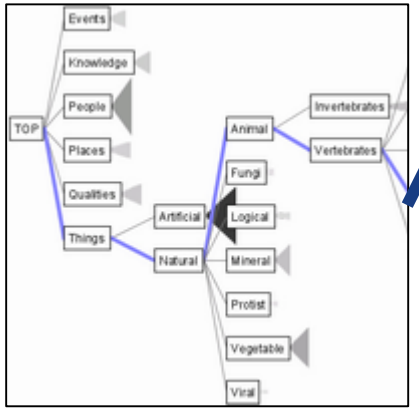




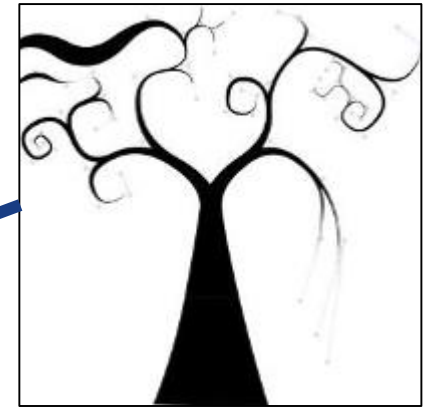


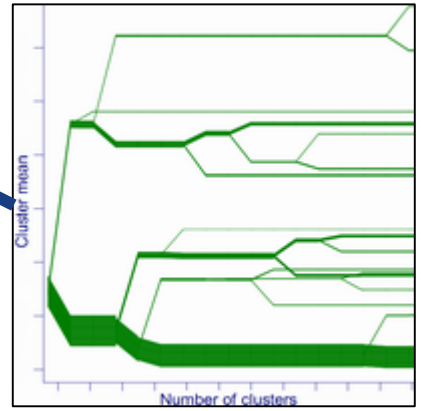
EFFECTIVENESS: MATCHING THE TASK





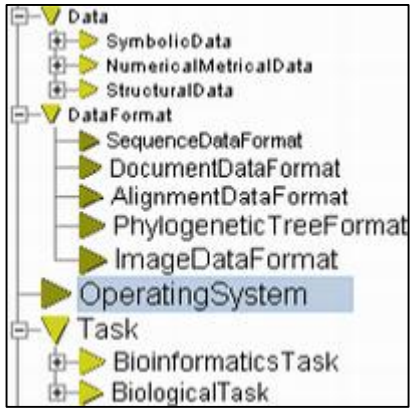
Abstract Add Annotate Arrange Assign Associate Blend Bookmark Browse Brush Calculate Categorize Change Characterize Clarify Classify Clone Cluster **Compare** Compute Configure Connect Coordinate Correlate Create Delete Delineate Derive Describe Determine Discover Discuss Distinguish Edit Elaborate Encode **Enjoy** Establish Examine Explore Extract Filter Find Generate Guide History Identify Infer Inspect Learn Locate Lookup Manipulate **Measure** Merge Modify **Navigate** Operate Organize Orient Overview Parse Present Query Rank Recognize Reconfigure Record Redo Relate Relocate Remove Restore Retrieve Reveal Revisit Scan Search Select Share Sort Specify Split Summarize Transform Translate Undo Validate Visualize Zoom





APPROPRIATENESS: MATCHING THE USER

- Different levels of experience / training
- Different cultures (e.g., reading directions)
- Different abilities (e.g., color perception, mental rotation)
- Different personality traits (e.g., locus of control)

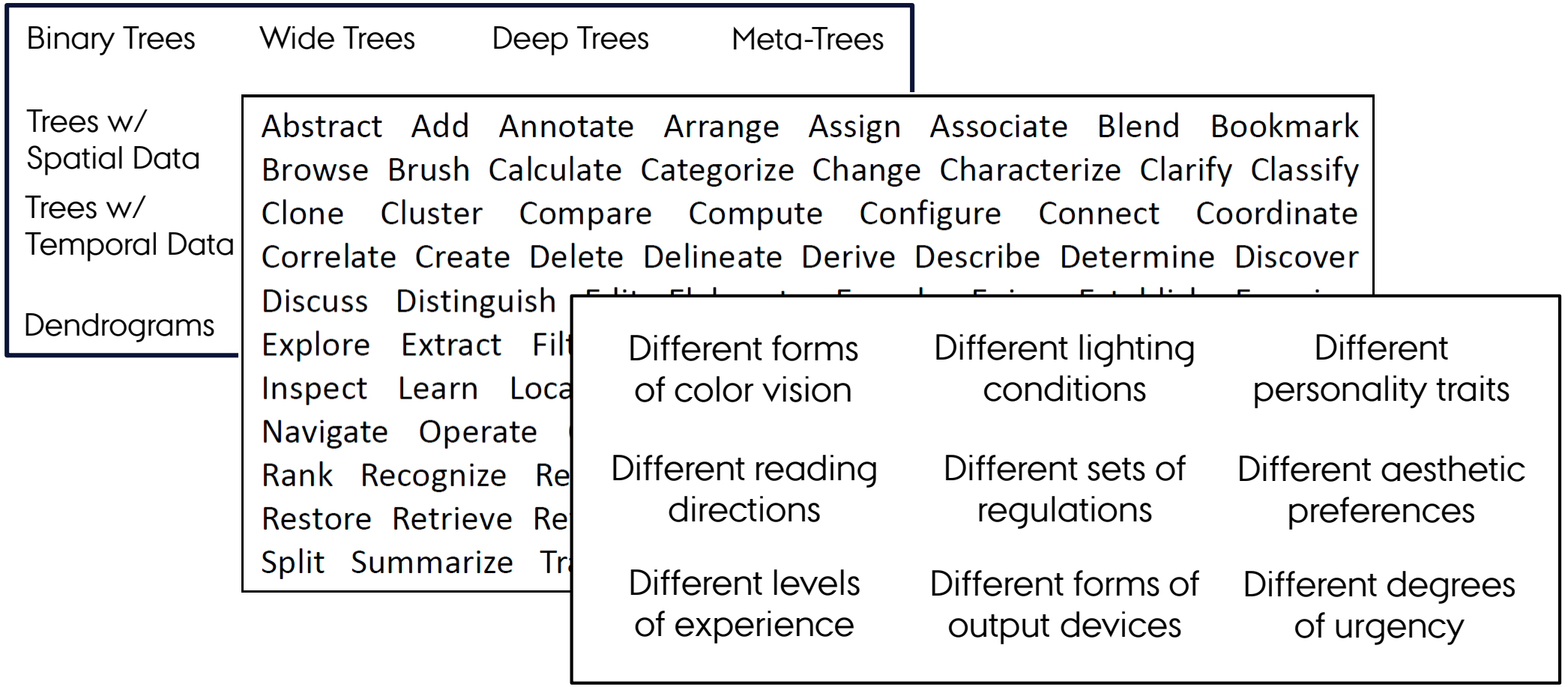


vs.

External locus of control:
No significant difference in performance

Internal locus of control:
Treeview clearly outperforms Nested View

YOU CANNOT CATCH 'EM ALL!



LET'S CATCH THEM ALL: A META-ALGORITHM

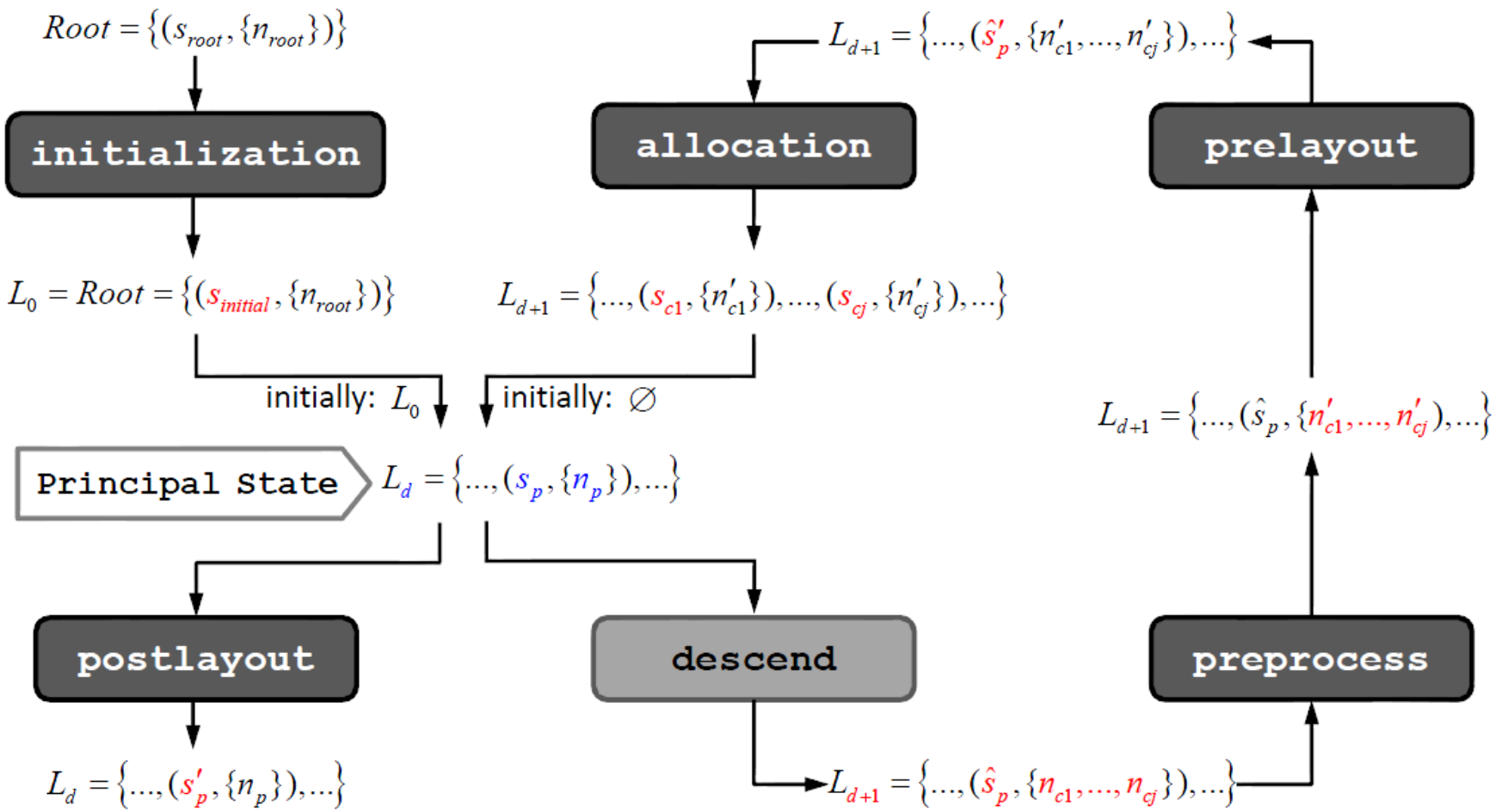
```
function POSITIONTREE (Node): BOOLEAN;
begin
    if Node ≠ ϕ then
        begin
            (* Initialize the list of previous nodes at each level.   *)
            INITPREVNODELIST;

            (* Do the preliminary positioning with a postorder walk.  *)
            FIRSTWALK(Node, 0);

            (* Determine how to adjust all the nodes with respect to  *)
            (* the location of the root.                              *)
            xTopAdjustment ← XCOORD(Node) - PRELIM(Node);
            yTopAdjustment ← YCOORD(Node);

            (* Do the final positioning with a preorder walk.         *)
            return SECONDWALK(Node, 0, 0);
        end;
    else
        (* Trivial: return TRUE if a null pointer was passed.         *)
        return TRUE;
end.
```

Figure 1. Function POSITIONTREE. This function determines the coordinates for each node in a tree. A pointer to the apex node of the tree is passed as input.

Walker Layout

[Walker II 1990]

LET'S CATCH THEM ALL: A META-ALGORITHM



Layout Presets:

- X-Mas Tree Layout
- Radial Node-Link
- Nested Sqrd. TM
- Sunburst
- Rectburst
- Slice+Dice TM
- Cascaded TM
- Icicle Plot
- PieTree
- Nested PieTree
- Squarified PieTree
- Nested Sqrd. PieTree
- Inverse Sunburst
- Strip TM
- Bubbletree

Example Trees:

- mammals.xml
- javaclasses.xml
- phylo_A_BAD1.xml
- phylo_B_IM.xml
- d4_c2.xml
- d4_c3.xml
- d4_c4.xml
- d4_c5.xml
- d5_c2.xml
- d5_c3.xml
- d5_c4.xml
- d5_c5.xml
- d8_c2.xml
- d8_c3.xml

Stage 0: initialization

```
reshape(CIRCLE);
```

Stage 2: preprocess

```
```

Stage 3: prelayout

```
scale(BY,BOTTOM,"-
root.dimY/root.height");
```

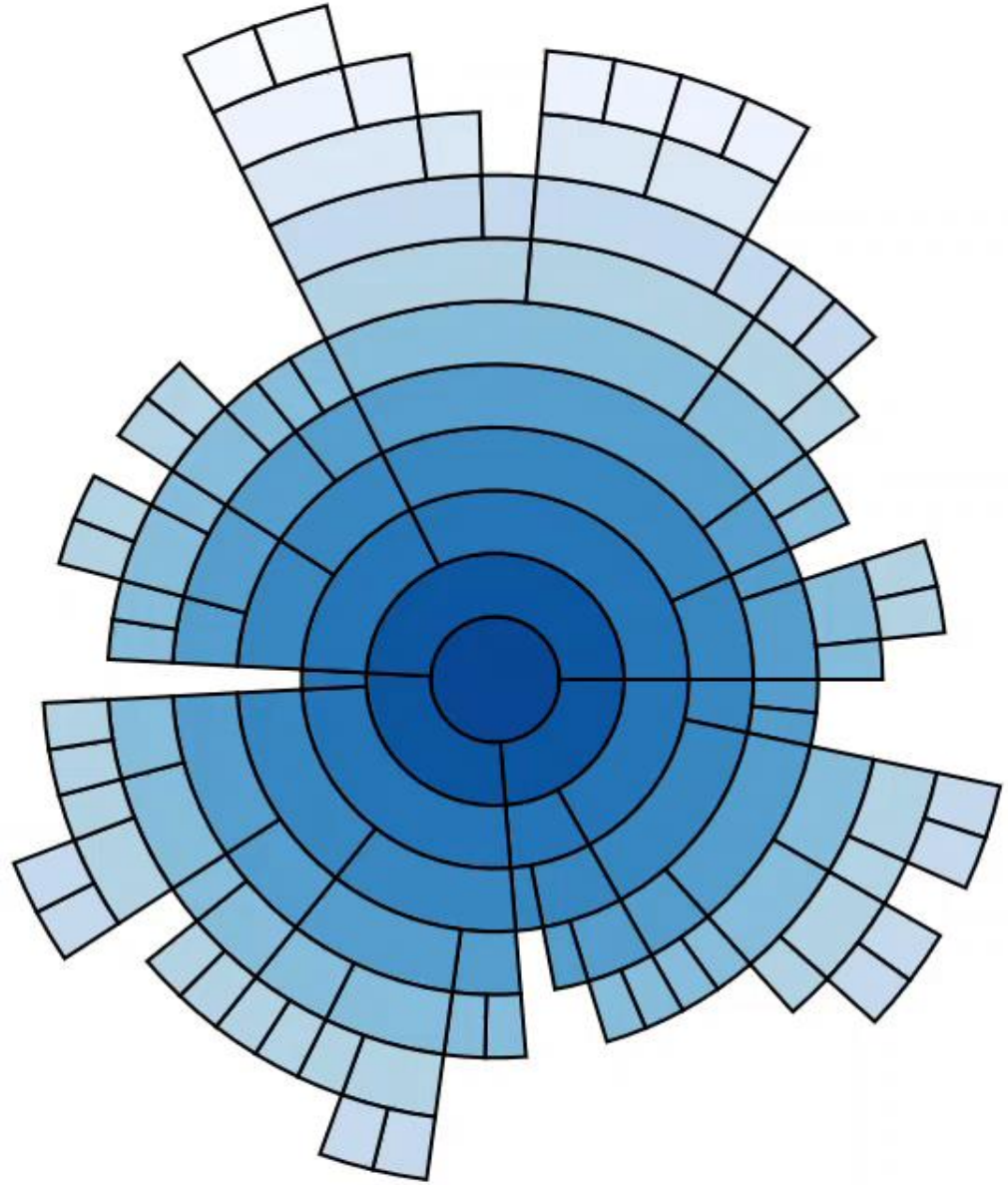
Stage 4: allocation

```
slice(HORIZONTAL,"leaves");
```

Stage 5: postlayout

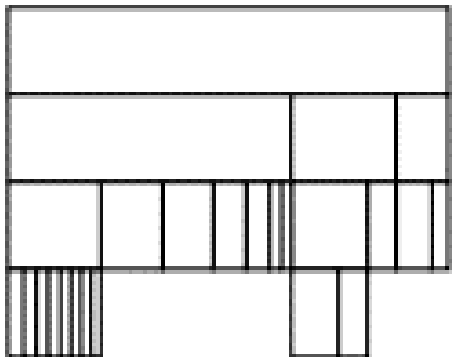
```
scale(TO,TOP,"root.dimY/root.height")
;
setStrokeWidth(NODES,2);
fill("Blues",DARK2LIGHT,"node.level+1
","root.height");
```

Get Help | Run the Layout



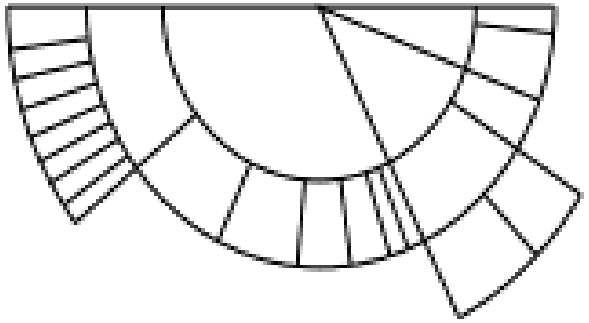
WE HAVE JUST SHIFTED, BUT NOT SOLVED THE PROBLEM (YET)

FLAT



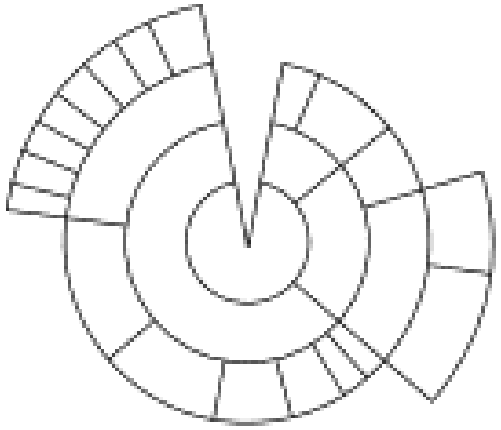
Icicle Plot

SEMICIRCULAR



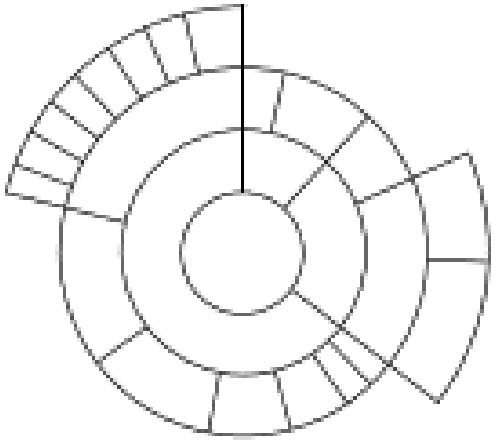
Information Slice

"MISSING CAKE PIECE"



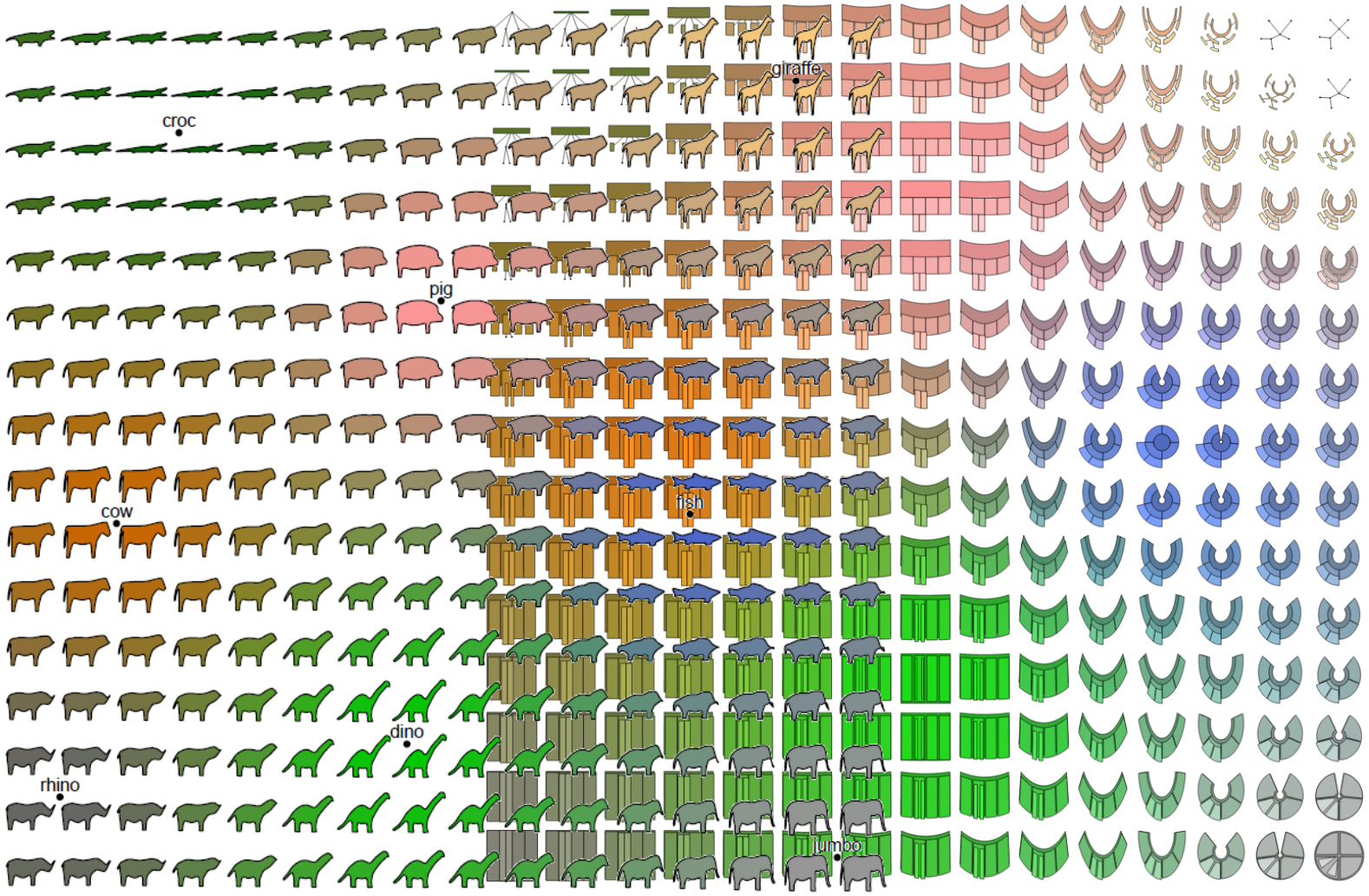
Aggregate Tree Map

CIRCULAR



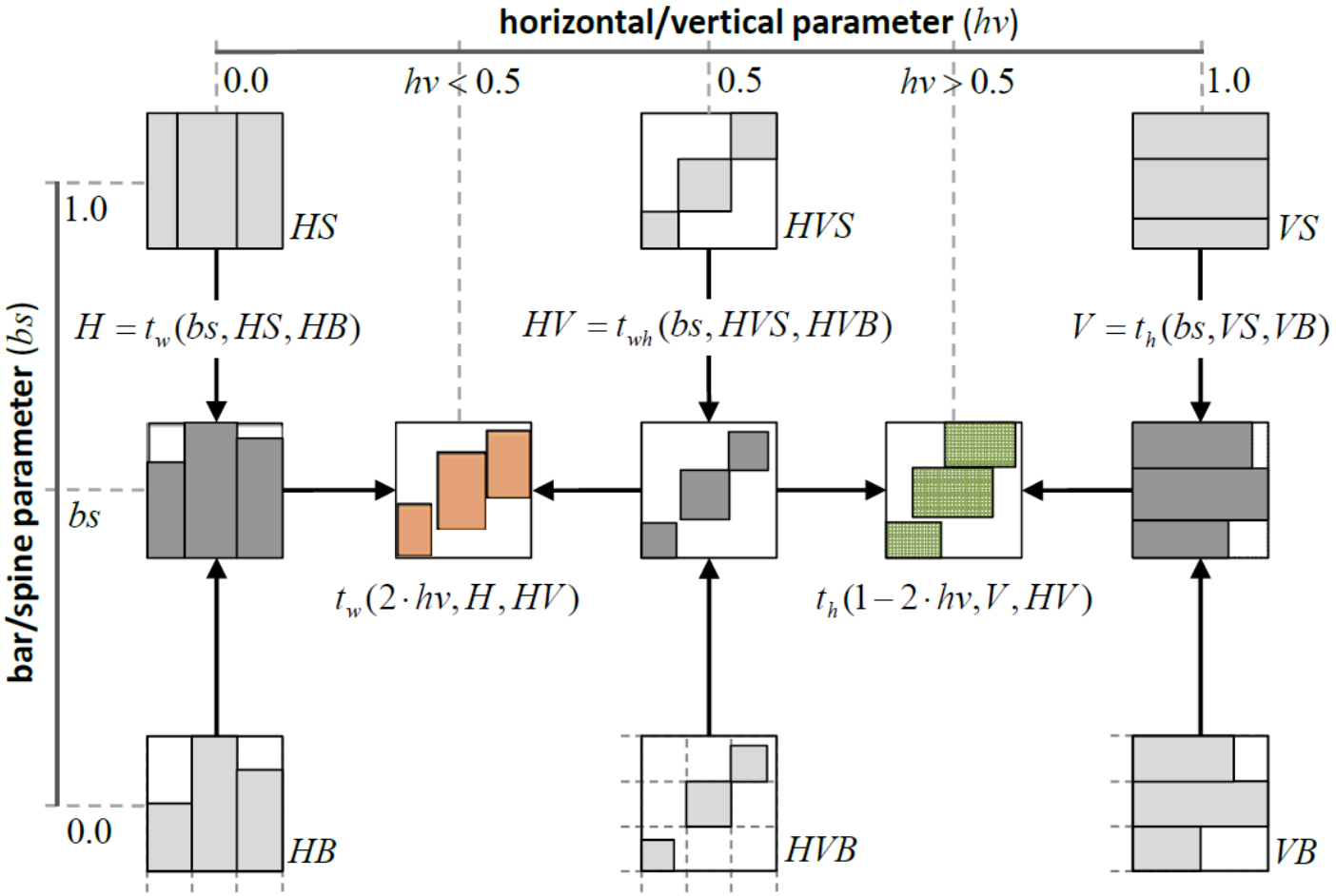
Sunburst

LET'S CATCH US SOME MORE: MORPHING!



[van Wijk, Overveld 2003]

LET'S CATCH US SOME MORE: MORPHING!

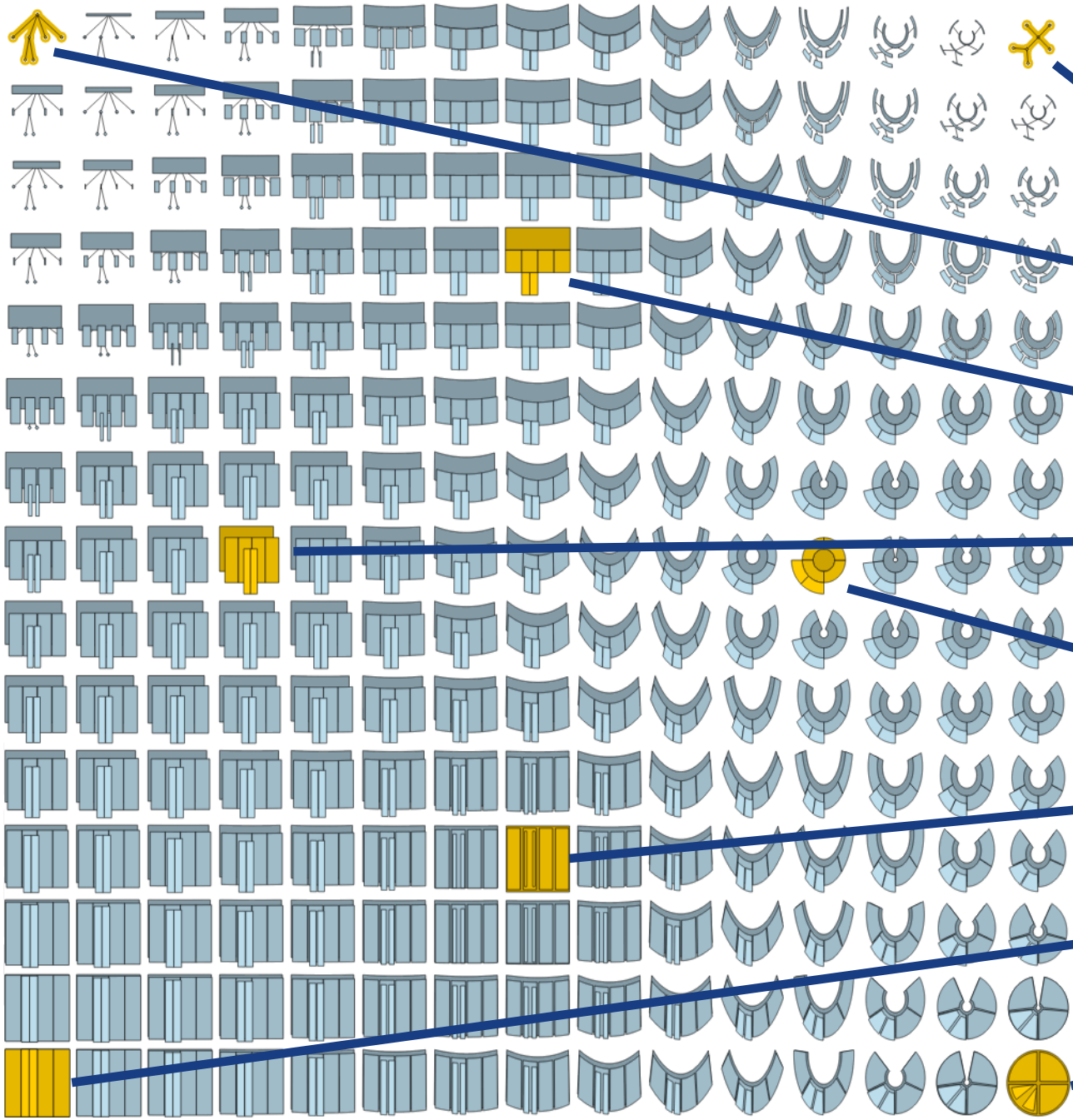


$$t_w(p, A_1[w_1, h_1], A_2[w_2, h_2]) = A_3[w_3, h_3] \text{ with}$$
$$A_3 = (1-p) \cdot A_1 + p \cdot A_2$$
$$w_3 = (1-p) \cdot w_1 + p \cdot w_2$$
$$h_3 = A_3 / w_3$$

$$t_h(p, A_1[w_1, h_1], A_2[w_2, h_2]) = A_3[w_3, h_3] \text{ with}$$
$$A_3 = (1-p) \cdot A_1 + p \cdot A_2$$
$$h_3 = (1-p) \cdot h_1 + p \cdot h_2$$
$$w_3 = A_3 / h_3$$

$$t_{wh}(p, A_1[w_1, h_1], A_2[w_2, h_2]) = A_3[w_3, h_3] \text{ with}$$
$$A_3 = (1-p) \cdot A_1 + p \cdot A_2$$
$$w_3 = h_3 = \sqrt{A_3}$$

$$t_{pos}(p, A_1[x_1, y_1], A_2[x_2, y_2]) = A_3[x_3, y_3] \text{ with}$$
$$x_3 = (1-p) \cdot x_1 + p \cdot x_2$$
$$y_3 = (1-p) \cdot y_1 + p \cdot y_2$$



Tree Visualization Presets

Radial Tree Layout

X-mas Tree Layout

Icicle Plot

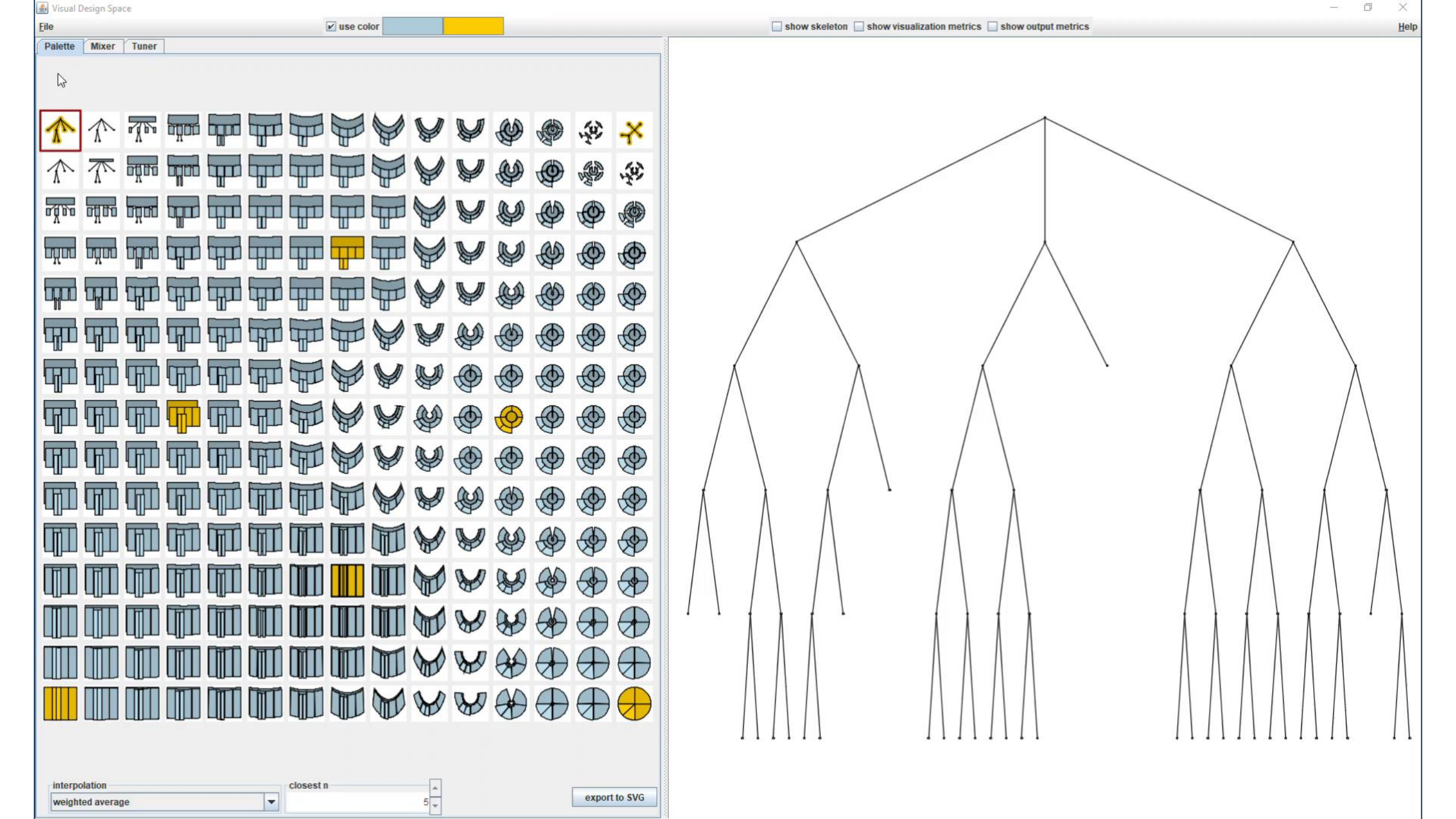
Cascaded Treemap

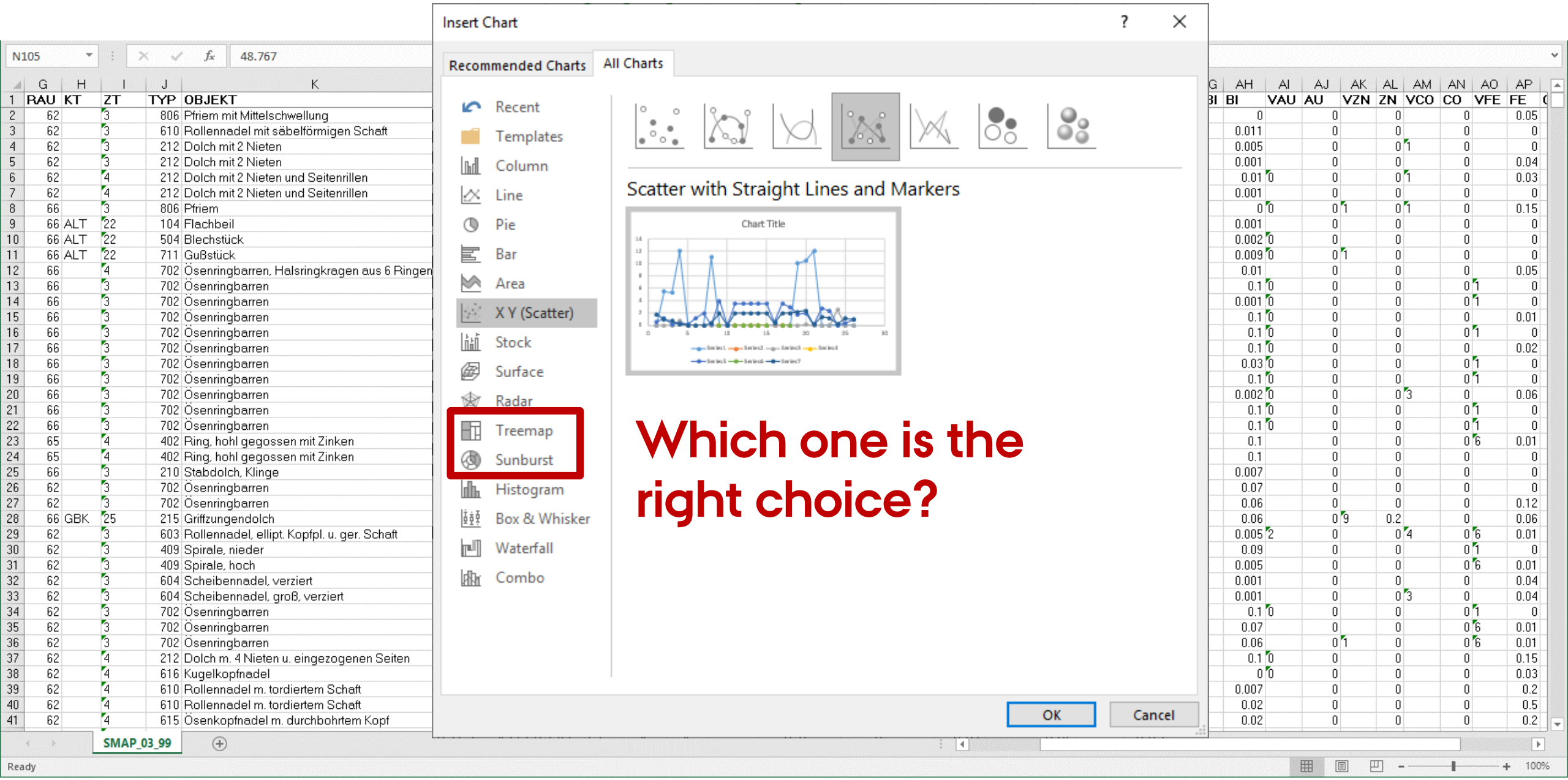
Sunburst

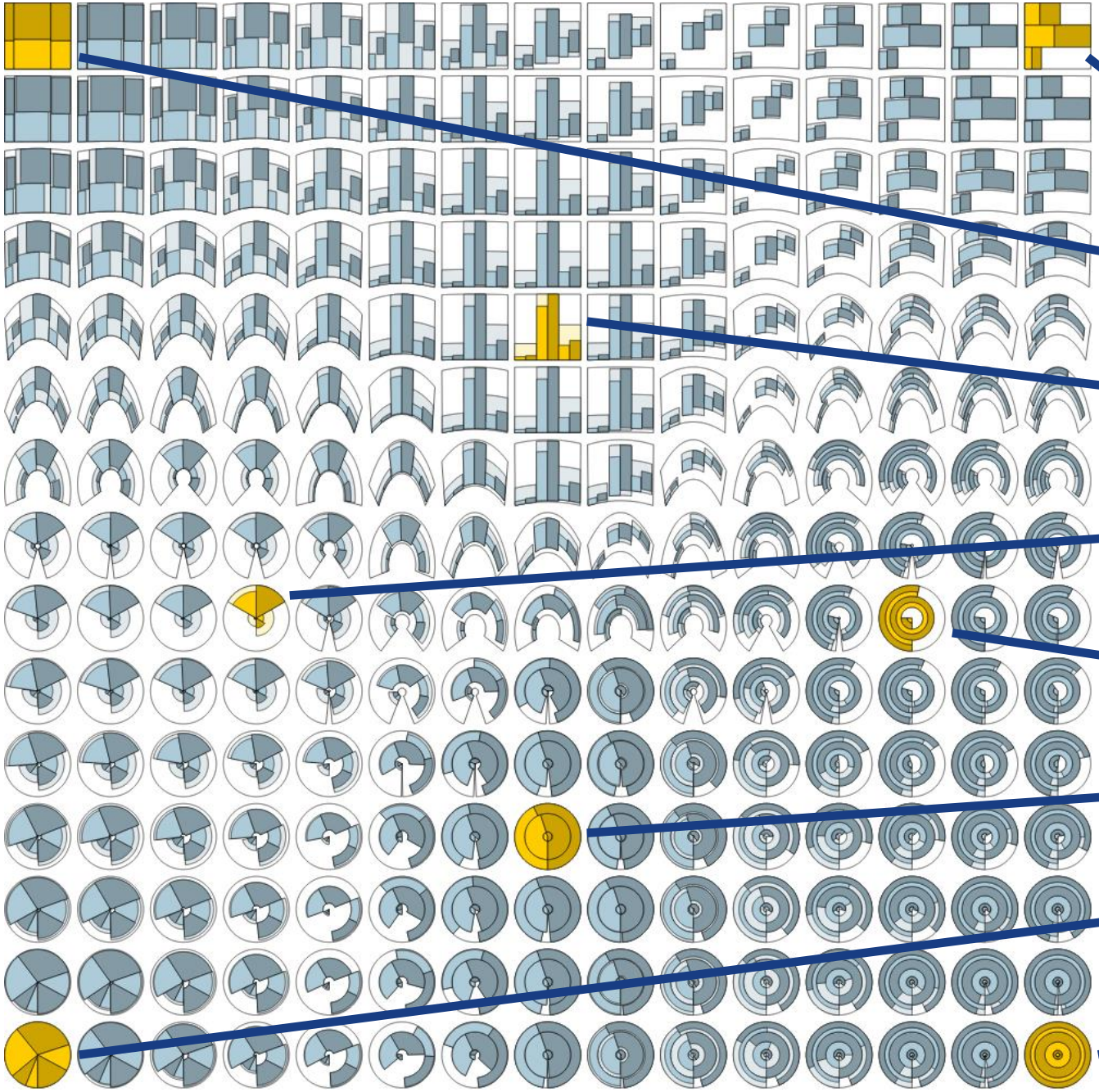
Nested Treemap

Treemap

Pietree


Visual Design Space
File
use color
show skeleton
show visualization metrics
show output metrics
Help
Palette
Mixer
Tuner
interpolation
weighted average
closest n
5
export to SVG


Insert Chart
Recommended Charts
All Charts
Recent
Templates
Column
Line
Pie
Bar
Area
X Y (Scatter)
Stock
Surface
Radar
Treemap
Sunburst
Histogram
Box & Whisker
Waterfall
Combo
Scatter with Straight Lines and Markers
Chart Title
OK
Cancel
Which one is the right choice?
N105
48.767
SMAP_03_99
Ready



Product Plot Presets

Stacked Bar Chart

Mosaic Plot

Nested Column Chart

Windrose Graph

Racetrack Plot

Stacked Pie Chart

Pie Chart

Ring Chart

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