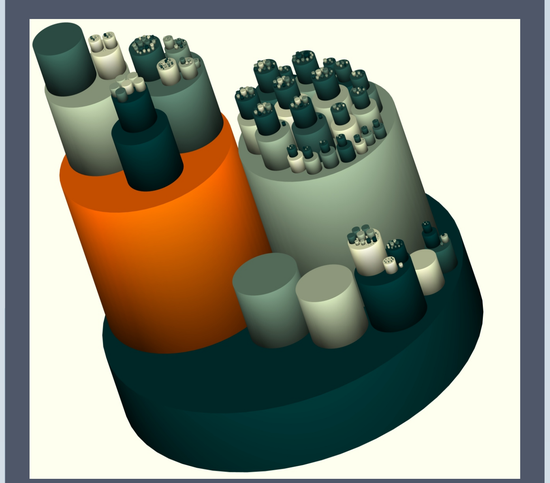
Exploration of the 3D Treemap Design Space

To design 3D Treemap Visualizations, four choices have to be made:

1. **Relationship:** Containment, Adjacency or Overlap
2. **Graphics Primitive:** Boxes, Cylinders, Spheres,...
3. **Layout Method:** Slice&Dice, Squarified, Strip, Circle Packing,...
4. **Alignment Method:** axis-parallel, radial, free

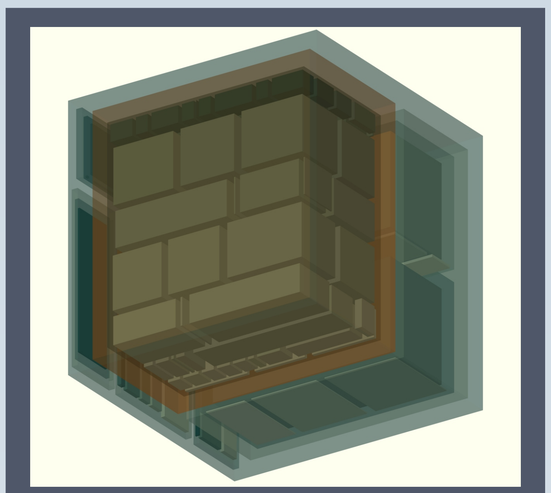
Each of these choices can be varied to yield new 3D Treemaps:

Relationship



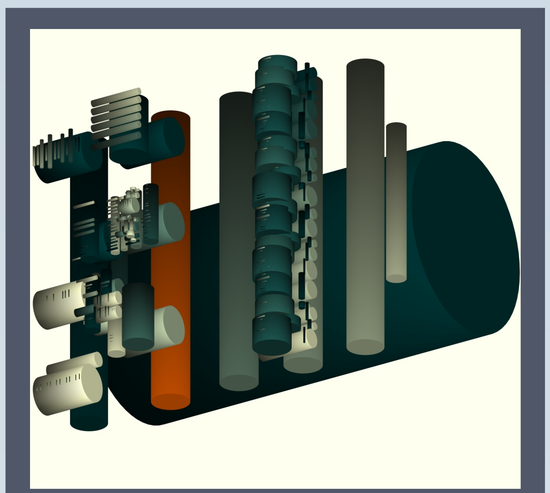
CIRCULAR TREEMAP:
Adjacent cylinders in a circle-packing layout

Graphics Primitive



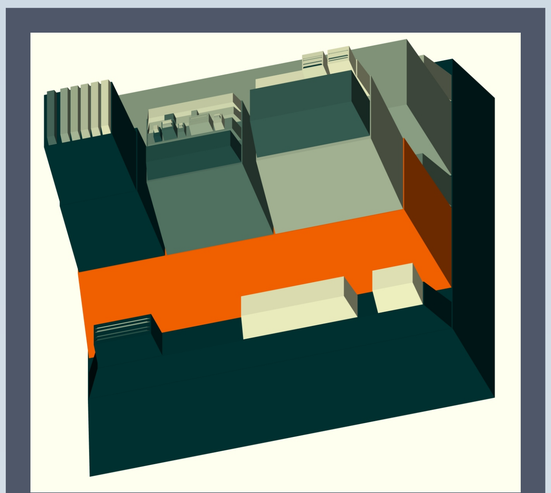
TREE CUBE:
Contained boxes in an axis-parallel strip layout

Layout Method

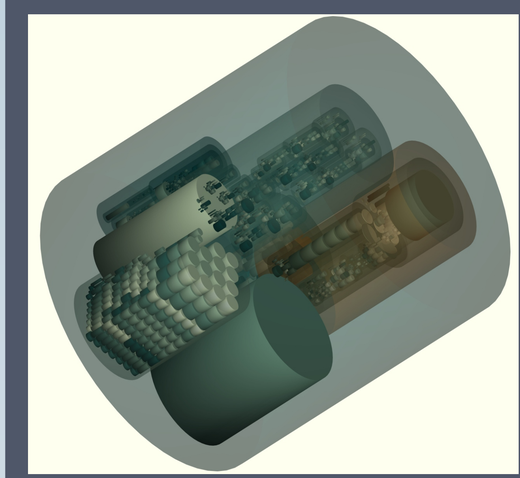


BEAMTREE:
Adjacent cylinders in an axis-parallel Slice&Dice layout

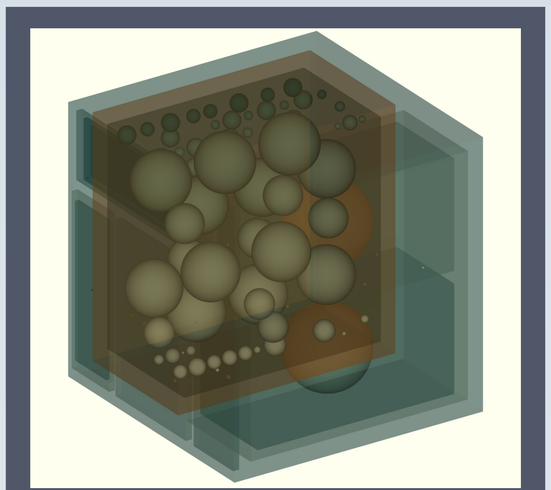
Alignment Method



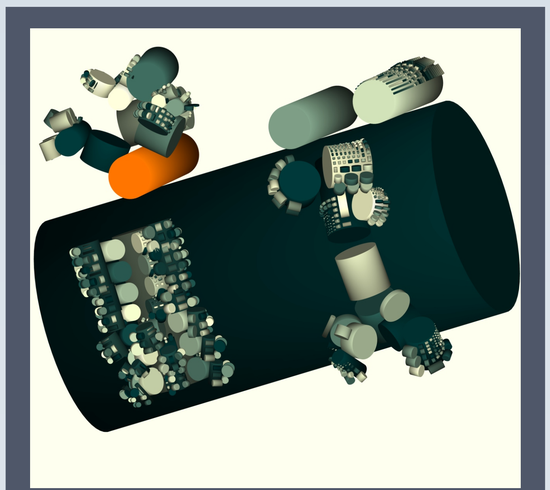
INFORMATION PYRAMID:
Adjacent frustums of pyramids in an axis-parallel Slice&Dice layout



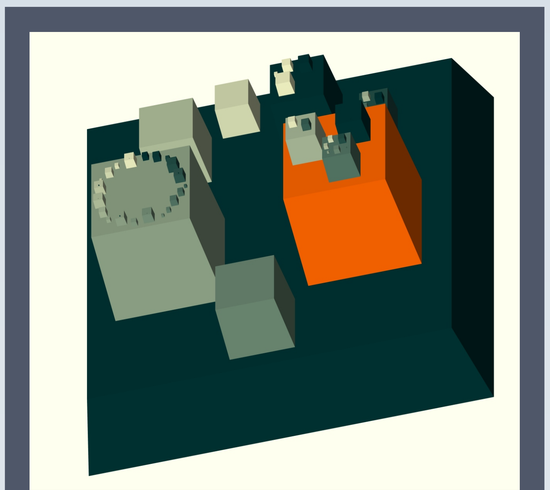
VARIATION:
As above, but with contained instead of adjacent cylinders



VARIATION:
As above, but with spheres instead of boxes for all leaves



VARIATION:
As above, but with a squarified instead of a Slice&Dice layout.



VARIATION:
As above, but with a radial instead of an axis-parallel alignment

University of Rostock, Germany

Faculty of Computer Science and Electrical Engineering

Hans-Jörg Schulz, Martin Luboschik,
Steffen Hadlak, Heidrun Schumann