**Data visualization: Test Questions** **WS 2024/2025**

1. Basic breakdown of graphical forms used in data visualization and a brief historical overview.
2. Definition of the term dataset, continuity, characteristics of dimensions; sampled data and their reconstruction, formal notation, examples of basis functions and methods of domain decomposition.
3. Interpolation of (scalar) data directly from a point cloud without using a grid. Color models and color gradients used in data visualization.
4. Visualization of vector fields, divergence, rotation, streamlines.
5. Reconstruction of iso-surfaces in 3D, Marching cubes algorithm.
6. Tensor data and possibilities of their visualization, examples of second order tensors, basic operations with tensors.
7. Methods of visualization of volumetric data, optical models, methods of classification and composition of samples, interpolation possibilities.
8. Visualization of abstract data and their characteristics, possibilities of graph visualization structures and multidimensional data, dimension reduction.
9. Graph quality assessment metrics and modification options.