

3D modelling in GIS

Concepts and theoretic base of 3D modelling.
Data management systems of a 3D model and the structure of GIS databases for 3D modelling purposes.
The modelling procedure and the classification of 3D modelling methods.
The concept of tessellation.
Processing and storing grid data. Calculation of grid point values.
The real, the virtual and the conceptual 3D model.
Tools for visualization and querying.

Literature:

Albert, G. 2009: Methods of constructing and visualizing 3D geological models from the GIS approach, Ph.D dissertation – Manuscript, ELTE, Doctorate School of Earth Sciences, 150 p.
Kidner, D., Dorey, M., Smith, D. 1999: What's the point? Interpolation and extrapolation with a regular grid DEM. – IV International Conference on GeoComputation, Fredericksburg, VA, USA

Suggested literature:

Albert G, Csillag G, Fodor L, Zentai L. 2012: Visualisation of geological observations on web 2.0 based maps – In: Zentai L, Reyes Nunez J (eds.): Maps for the future – Springer.
Bohling, G. 2005: Introduction to geostatistics and variogram analysis. – Kansas Geological Survey, 25 p.
Gold C. M. 1991: Problems with handling spatial data - the Voronoi approach. CISM Journal ACSGC. Vol. 45, No. 1. Springer 1991. pp. 65-80.