
Assignment 8

Submitted by:

Anirban Ghosh - 3279100 - s6anghos@uni-bonn.de

Kajal Puri - 3305398 - s6kapuri@uni-bonn.de

Shilpa Chatterjee - 404788-shilpa.chatterjee@rwth-aachen.de

Course: *Visual Data Analysis (MA-INF 2222)* – Professor: *Dr. Thomas Schultz*

Submission Date: *June 21st, 2020*

Exercise 4 (Grids)

a) How many numbers need to be stored to fully specify a scalar field on a Cartesian grid of size 10 10 10 (including the data itself)?

Answer. $N_x \times N_y \times N_z = 10 \times 10 \times 10 = 1000$

b) How many cells does the grid from a) contain?

Answer. Number of cells: $(N_x - 1) \times (N_y - 1) \times (N_z - 1) = 9 \times 9 \times 9 = 729$

c) How many additional numbers need to be stored if the same grid is specified in more general form as a rectilinear grid?

Answer. 1D array to represent grid spacing along I, J, K axis: $3 \times 9 = 27$

d) Given a rectilinear grid, what criterion has to be checked to decide if it can also be represented as a uniform grid?

Answer. There should be regular spacing between grid points to represent it as a uniform grid.