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Surface Interpolation System for Geologic Data on the Web

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Geologic data observed in the field survey are often distributed irregularly. One of the effective way to interpret these data objectively is a contour map generation with a certain interpolation method.

We developed a prototype of surface interpolation system for geologic data. The system enables us to determine an optimal surface for a given set of geologic data on the Web. Two kinds of filed survey data are available. One is elevation data and the other is strike-dip data. The optimal geologic surface is determined based on smoothing algorithm with bi-cubic B-spline.

The procedures for surface interpolation are as follows: 1) upload field survey data, 2) generate distribution map of uploaded data, 3) determine the optimal geologic surface and 4) generate the contour map for the optimal surface. There are three kinds of output data: 1) mathematical function that represents the optimal geologic surface, 2) evaluation parameters for smoothness of the surface and goodness of fit and 3) mesh data with arbitrary size of grids.

This system must promote effective use of geologic data on the Web. In this presentation, we will explain the detail of the system.

Keywords: Geologic Data, Interpolation, Web, Bi-cubic B-spline, Contour map