

Outline

- Announcements:
 - Homework IV due Friday by 5, by e-mail
 - Answers will be posted on web
 - Only available after Tuesday by e-mail (slow response).
 - However, I will be available 8:30-1 on Monday and by appointment
 - Homework III: answers on web
- Homework III & Awards
- Demo
- Controlling transparency and using it for science
- Where to go from here
- Course Evaluations

Homework III

- Nice job!
- Only problem was with your geography

Awards

- Will be announced in class!
- Don't miss this!

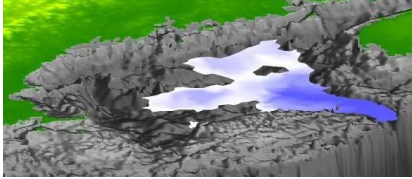
Demo

Gus Lott will demonstrate a GUI he developed for exploring proteins with in a fluid jet.

Making transparency useful

- Statistical interpolation techniques (like kriging) give you a distribution of values and an estimate of their accuracy (error variance)
- Most people will simply plot the interpolated data and ignore the error maps
- Ideally, we would incorporate error into the image so that it is easy to tell which values we believe

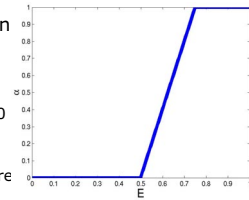
Old GOM Figure



- Interpolated temperature data (point samples) on to triangular mesh using kriging
- Set points with value $< V$ and error $> E$ to Nan
- Plotted as a patch with color proportional to T (had to append blue-white map to colormap)

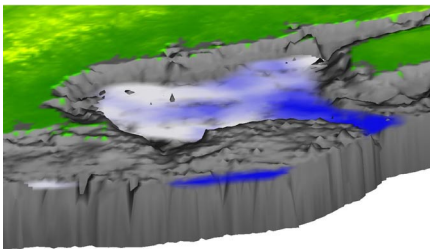
New GOM Figure

- Want to incorporate error in a less arbitrary manner
 - Let transparency be proportional to error
 - 1) create a surface at $Z=-100$ m with color proportional to temp
 - 2) set its alphadata to E where $E=-1*error+1$ (in $[0\ 1]$)
 - 3) create an alphamap and place it in axes
 - 4) set alphalimits (alim) of figure to $[0\ 1]$



New GOM Figure

- Implemented in GOMLSSWplot.m



Other Scientific Visualization Courses

- This is the only course to focus on scientific visualization, especially using Matlab.
- If you are interested in computer graphics:
 - CS 417: Computer Graphics and Visualization (learn OpenGL, make \$\$\$)
- If you are interested in making effective visualizations:
 - try the Communications Department which offers courses on visual communication, human-computer interaction, and scientific writing

Other Scientific Computing Courses

- CIS Tools Curriculum
 - Fall: MATLAB
 - 401: the basics
 - 402: visualization
 - Spring: General tools
 - 403: Developing scientific computer programs (compilers, debuggers, managing large projects)
 - 404: Numerical libraries
 - 403 begins Feb. 18
 - 404 begins March 25 (after spring break)

Evaluations

- Please give me as much data as you can
 - specific lecture/topics you liked & those you didn't
 - other topics to cover?
 - Tools Curriculum & mini-course format?
- Thanks!
