Loose Ends and Where to Go Next
(plus, a little geography)

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!