An Online Tool for the Visualization and Education **of Isoline Mapping**

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Overview:

i) larger context **Democratization of Cartography**
ii) specific problem **Isarithmic Mapping**
iii) isoline engine **Feature Set and Demo**

Democratization of Cartography:

goal of providing the ability to make maps to **Everyone**

but…

most tools are **Expert** systems designed by **Experts** for **Experts**

Powerful Tools + Little Guidance = Potential Trouble

But this is not a **Straw Man Argument**

(**Harrower**: "like faulting the **Knife** for making a poor **Spoon**")

Specific Problem – Isarithmic Mapping

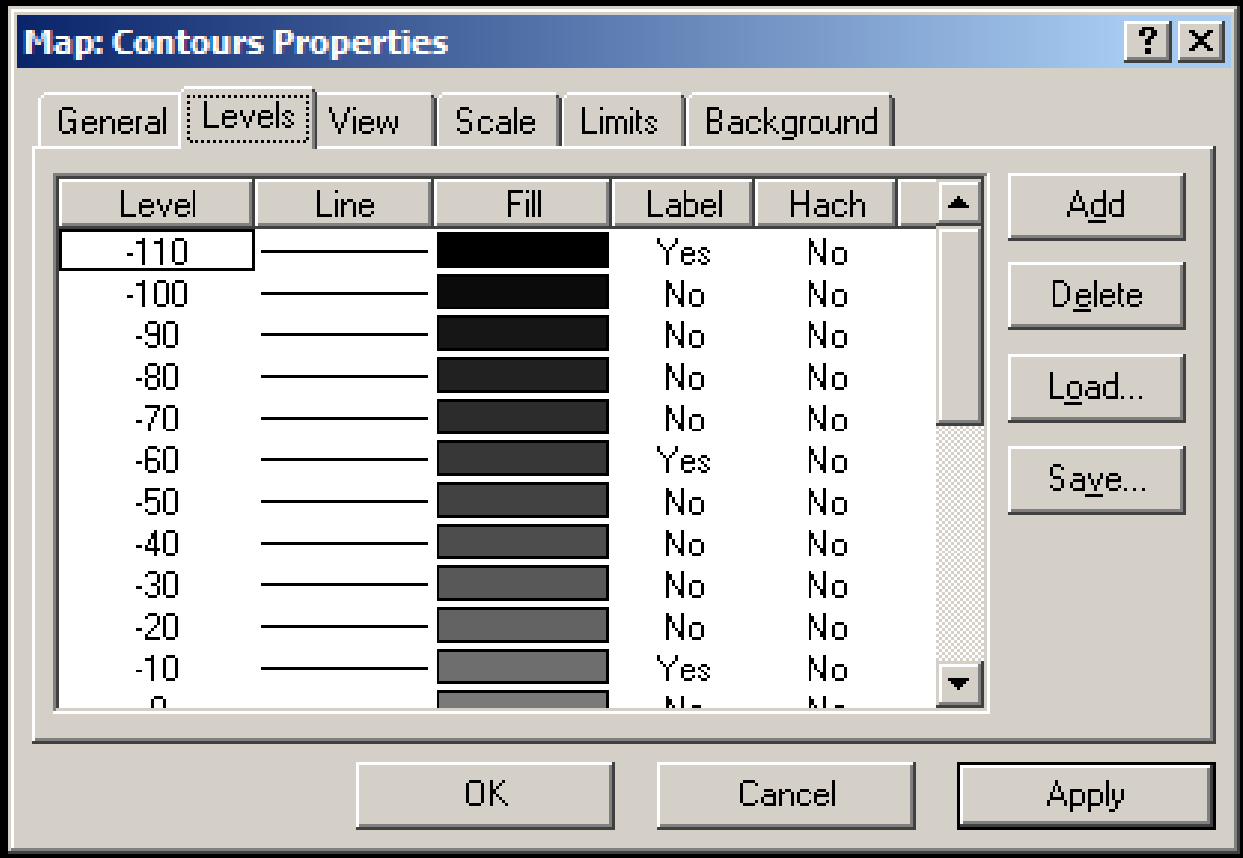
there are literally hundreds of packages for **Isarithmic Mapping**

many domain specific in such fields as **Geology, Hydrology, Meteorology,** etc.

also several universal software with isarithmic capability such as **ArcGIS** and **Surfer**

but this software is difficult for novice users because:

1) **there is an insane amount of parameters**



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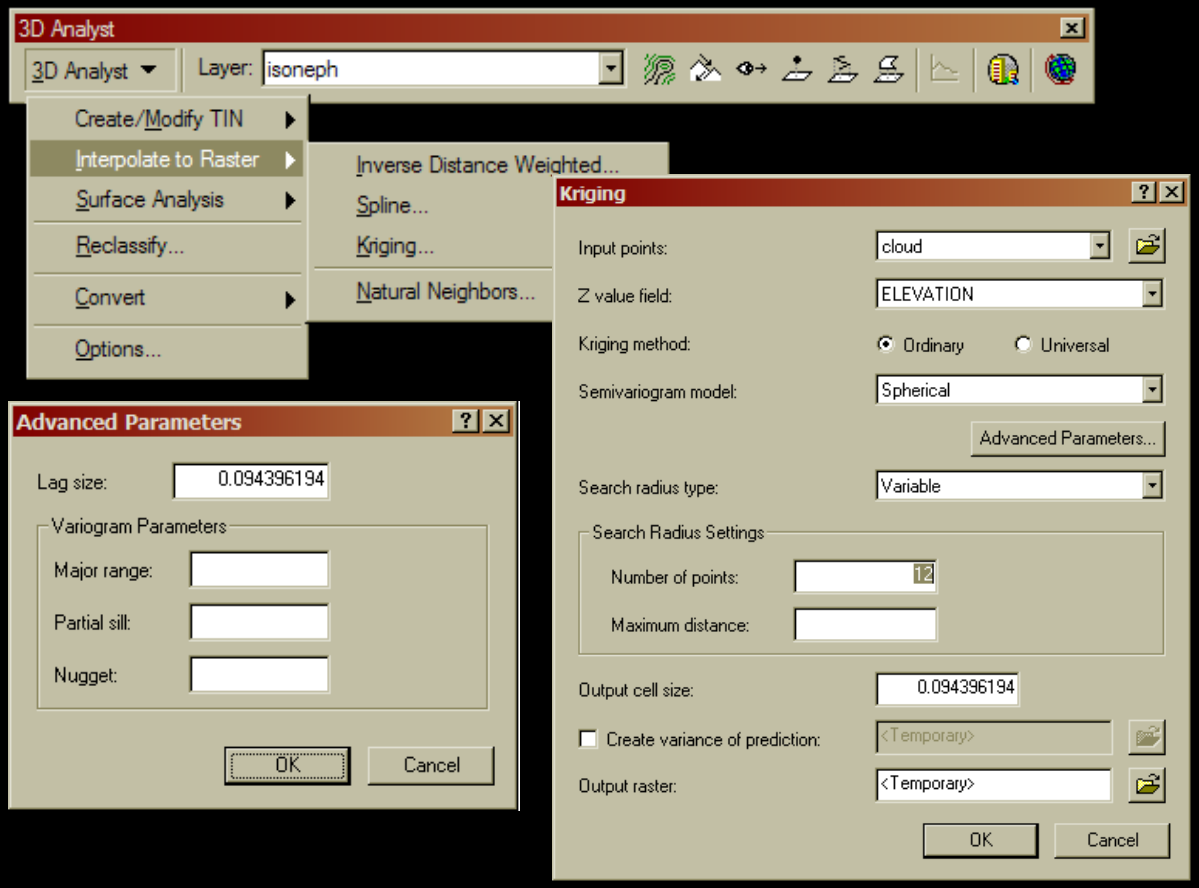
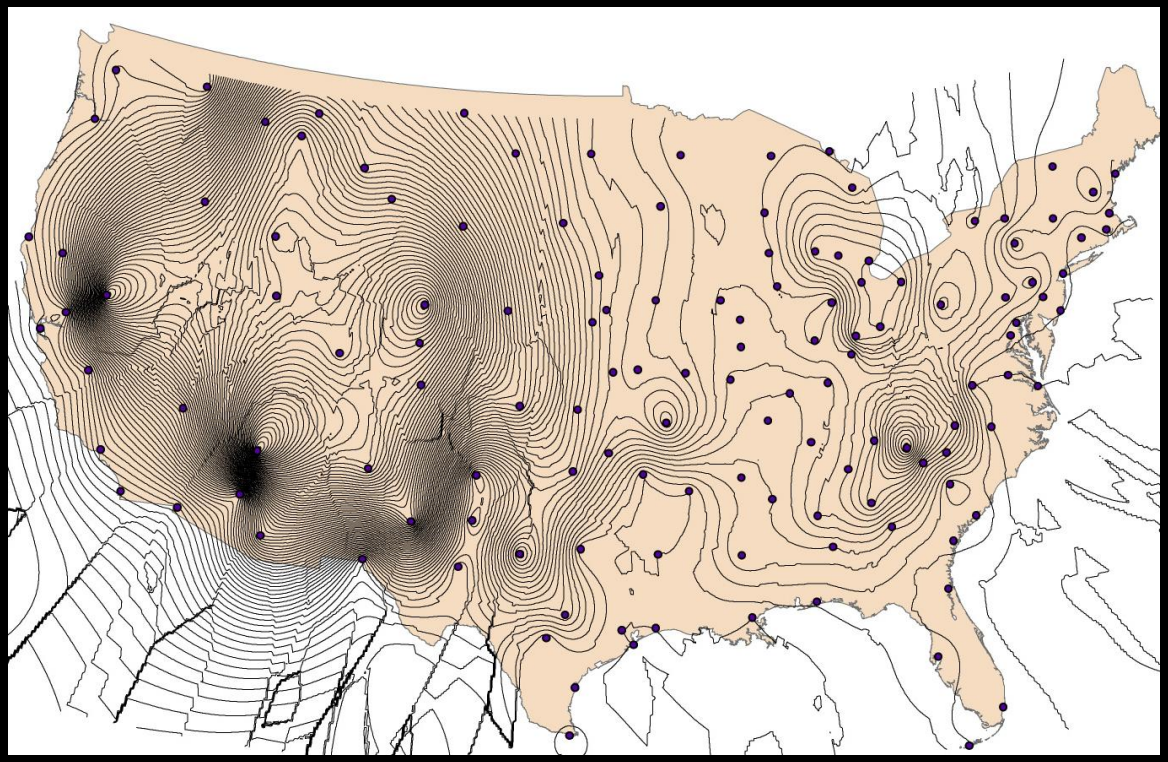


2) **the deeply nested structure of these parameters**

but this software is difficult for novice users because:



3) **the lack of immediate visual feedback of parameter changes**

Isoline Engine

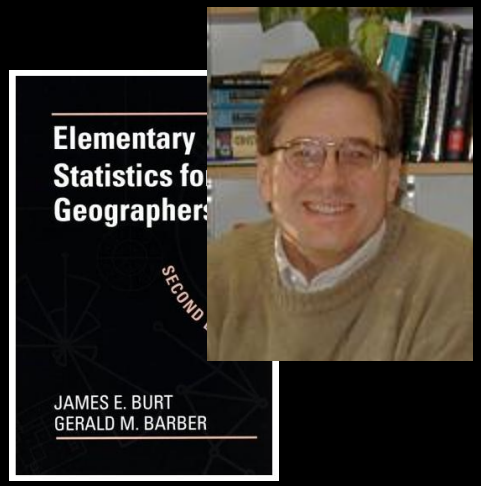
the goal: to create a web-based digital assistant to help novices and experts alike create more effective isarithmic maps

isoline engine should:

* act as a spatially referenced help system
* provide immediate visual feedback when altering parameters
* keep all interface controls visible to promote exploration of parameter combination

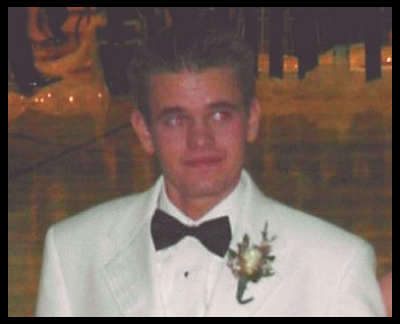
Isoline Engine

Help for making **isarithmic maps**



Jim: statistical background for spatial interpolation

Mark: principles of representation and map design



Rob: slave labor and yes man

isoline engine **Map Brewer**

- ***Focus on a specific cartographic design challenge (i.e., not a general lesson)***
- Organize design choices around a set of established mapping principles
- ***Offer only suitable choices (i.e., nothing too extreme or irrelevant)***
- Encourage learning about design choices
- Not be software-specific
- Only require basic skills with mapping software
- Offer tips on the suitability of choices
- Encourage users to be critical of their choices through an interactive, graphical display

Brewer (2003)

Powerful [Isarithmic] Tools + [Isoline Engine's] Guidance = Success[1]

[1] Hopefully

Isoline Engine: Core Feature Set

smart **Help System:**

- term definitions, warnings, data suggestions, links to in depth explanations

lesson **Interpolation Parameter:**

- interpolation method, sample size and distribution, interval value

lesson **Display Settings:**

- line coloring, hypsometric tinting, labeling, index lines, smoothing

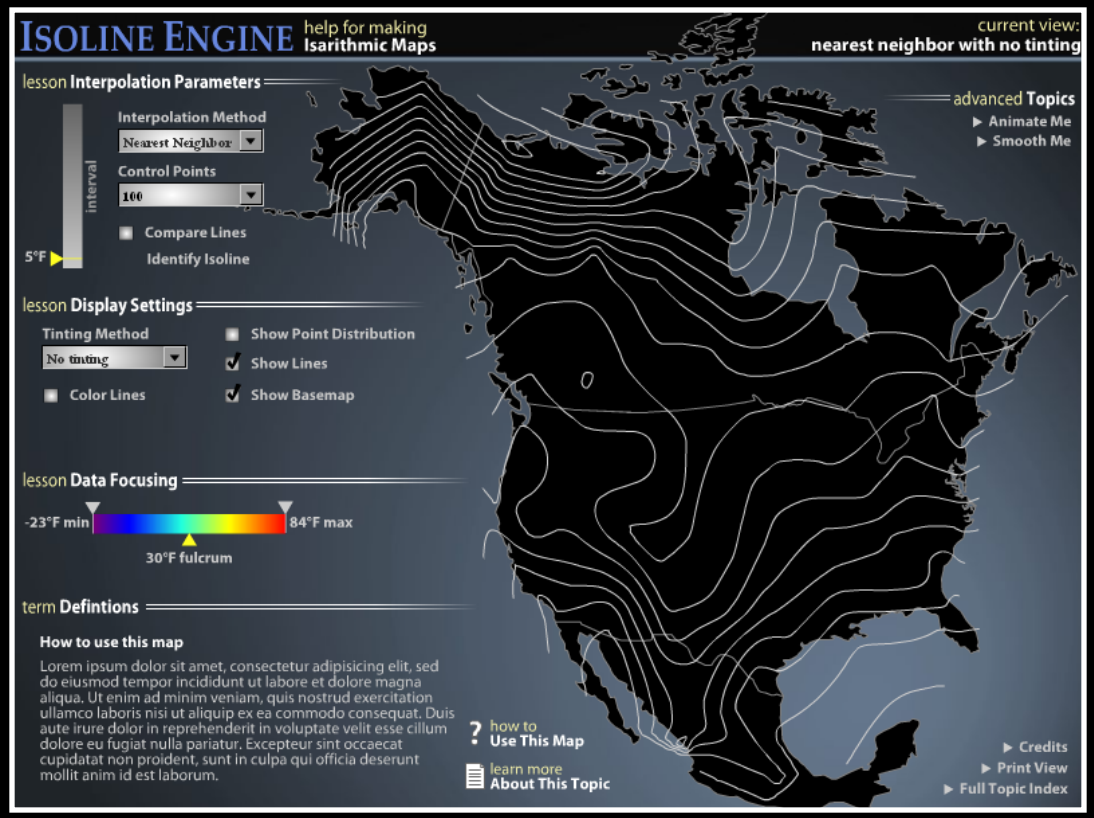
lesson **Data Focusing:**

- fulcrum value, maximum/minimum value

ISOLINE ENGINE

Help for making **isarithmic maps**

isoline engine **Demo**

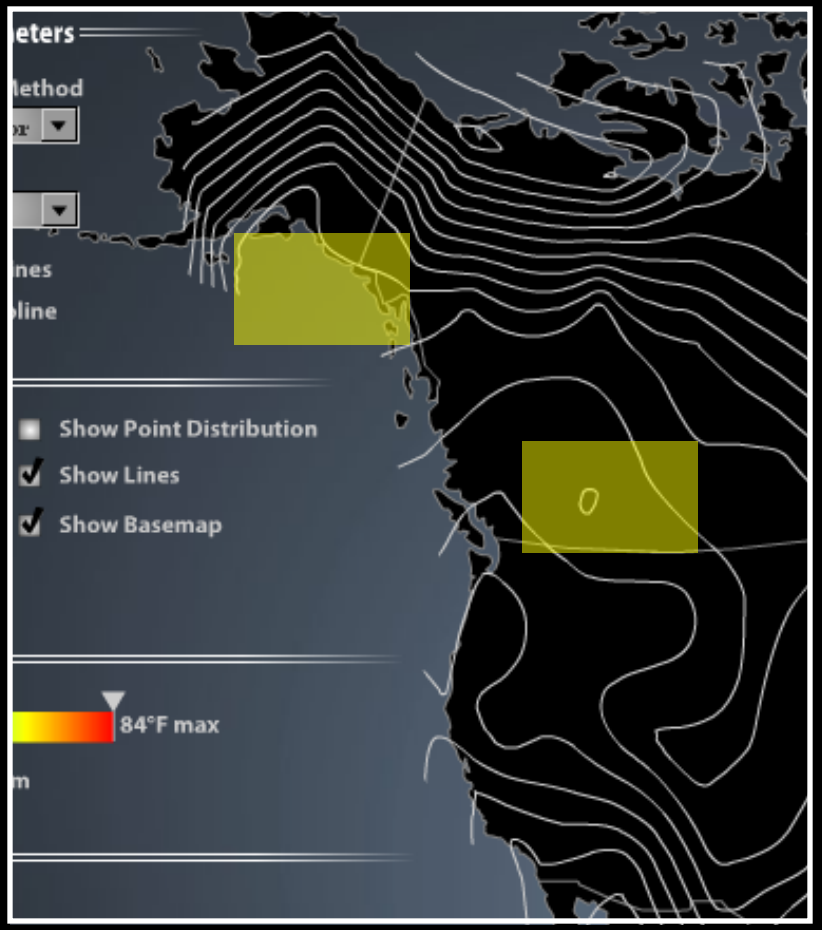


Isoline Engine

Help for making **isarithmic maps**

Isoline Engine: Extra Topics

- animation
- smoothing
- embedded warning boxes
  - *extrapolation
  - *island effects



discussion **Questions and Suggestions?**

~thanks!

Rob, Mark, and Jim