Subject: Re: Algorithm for lat/lon searching
Posted by K. Bowman on Fri, 18 Aug 2006 21:35:56 GMT
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In article <ec5b4m$rf1$1@news.nems.noaa.gov>,
Paul van Delst <Paul.vanDelst@noaa.gov> wrote:

> Hello,
>
> JD Smith wrote:
>> On Fri, 18 Aug 2006 10:50:56 -0400, Paul van Delst wrote:
>>
>>> Hello,
>>>
>>> I want to implement a global *land* surface emissivity database (as a LUT)
>>> into a radiative transfer code. Fir simplicity the database is simply
>>> gridded by lat/lon (land and sea). Due to memory limitations, I want to
>>> only keep the land gridboxes in my lookup table. Obviously, doing this
>>> complicates searching for the actual lat/lon element since they're no
>>> longer stored on a grid.

You can do something rather like reverse indices in HISTOGRAM. Treat your data as a 1-D array, and make an index that lets you access the relevant lines of data. This is similar to run-length encoding to compress an image. (A land-sea mask is a kind of binary image.) You'll trade-off searching the index for storage. In these days of cheap memory, is that a good trade-off?

Cheers, Ken