
Subject: Re: mapping/interpolation from one irregular grid to another (different) irregular grid.

Posted by [Klemen](#) on Tue, 24 Jan 2012 23:54:47 GMT

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If you want to map high resolution data (e.g. MODIS) with the footprint of the lower resolution data (e.g. SEVIRI), try something like:

1. Run through all low resolution (LR) pixels (1 or 2 for loops)
 - find the closest pixel of datasets having high resolution (HR) within the dataset having LR: MATCH_2D
 - assume that not more than e.g. 10 HR pixels left, right, up, down from this centre HR pixel can be within the LR pixel
 - once you constrain the possible HR pixels to check, construct (from the centre points of LR pixels) the LR pixel you are currently processing and check, which of the high resolution pixels fall in: `ROIobj->IDLanROI::ContainsPoints`
 - assign an index to these pixels so you can later recognize, which high res pixels correspond to one
2. This points depend on what you really want to do, if you want to interpolate than you should in previous step estimate also the distance between LR centre and each corresponding HR pixel. Here is an example for aggregation - average all HR pixel to LR pixel.

```
h=histogram(HR_index, REVERSE_INDICES=ri,omin=om)
gmax = max(h) ;Highest number of duplicate indicies
for j=1,gmax do begin
    g = where(h GE j, Ng)
    if Ng GT 0 then begin
        LR[om+g] = (LR[om+g]*(j-1.) + HR[ri[ri[g]+j-1]]) / j
    endif
endfor
```

If the resolutions of both datasets are significantly different (10 HR pixels covers 1 LR), then this might be quite fast - the point 2 is rapid, it takes me about a minute to compute point 1 (LR: 350×150 pixels, HR: 900×600 pixels)

Cheers, Klemen
