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Subject: Re: label\_region tracking queries  
Posted by [David Fanning](#) on Fri, 17 Aug 2007 13:57:27 GMT  
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id6684@googlemail.com writes:

> I am essentially looking at isolating structures within a series of  
> images, with a goal of tracking/recording their movement. Having  
> performed various kinds of filtering, I've settled on the initial  
> isolation method and am using Label \_regions (without, I admit, fully  
> understanding all of the steps - I have but a basic idea of  
> morphology) and would like to know if there's any way to plot  
> individually the regions that label\_region isolates?

First of all, if you work with LABEL\_REGION you need to know there are problems at its boundary. Typically, we fix this by adding a border around the image, often like this:

```
s = Size(image, /Dimensions)
border = BytArr(s[0]+2, s[1]+2) + MIN(image)
border[1,1] = image
```

Then, you can find your regions:

```
regions = LABEL_REGION(border)
```

Now, regions is a two dimensional array, with each region labeled with a unique number (or identifier, if you like). Suppose you were interested in the 10th one of those, you could look at it in isolation like this:

```
indices = Where(regions EQ 9)
isolated = BytArr(s[0]+2, s[1]+2)
isolated[indices] = 255B
TV, isolated
```

Or, you could look at it in the context of your real image, by doing something like this:

```
real = BytArr(s[0]+2, s[1]+2)
real[1,1] = image
real = BytScl(Temporary(real), Top=254)
real[indices] = 255B
LOADCT, 0, NCOLORS=254
TVLCT, 255, 255, 0, 255 ; Yellow color
TVImage, real, /TV
```

> As well as this, a quick piece of code that may assume that a region

- > in image one is the same as a region in the next image if it lies
- > within a certain size/location of the original? I see this being easy
- > if I work out how to display the individual regions and calculate
- > their vector distance from the origin.

You will have to work this out for yourself. You can find code on my web page to help you identify and characterize your "blob". For example, you can track the centroid, find out if it is rotating and translating, etc. You will probably have to be creative in how you locate and identify the same blob in subsequent images. It will depend on your data, etc.

[http://www.dfanning.com/ip\\_tips/fit\\_ellipse.html](http://www.dfanning.com/ip_tips/fit_ellipse.html)

Cheers,

David

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David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Sepore ma de ni thui. ("Perhaps thou speakest truth.")

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Subject: Re: label\_region tracking queries

Posted by [id6684](#) on Fri, 17 Aug 2007 14:06:36 GMT

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excellent. I have read much about the boundary problems in the past few hours, and hope to be learning fast. The above fit\_ellipse code looks ideal once I get some real time in calculating the rest, must have missed this before. Response was much appreciated,

OtherDavid.

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