Subject: Re: coherence test implementation
Posted by Dick Jackson on Thu, 13 May 1999 07:00:00 GMT
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Hi Mark,

Mark Rehbein wrote:
>
> Hi,
>
> I'm doing some cloud detection on some rather large images using what
> some people call a coherence test. To do a coherence test on a pixel
> you take a 3x3 matrix around that pixel and assign that pixel the
> standard deviation of the 3x3 matrix.

You piqued my curiosity, since you're right, there had to be a more efficient way! My attached coherence.pro should do the trick, and I clock it at about 60 times faster with a 300x300 test.

From your code, just call:

sddevimage = Coherence(ch4)

I return an image of the same size and leave the outer ring of pixels as 0.0, is that reasonable?

I used the formula for the SD of a set of 9 values:

SD = Sqrt((Sum(X^2) - (Sum(X)^2 / 9)) / 8)

Generalizing coherence.pro to allow variable 'width' (not fixed at 3) is left as an exercise to the reader. :-) I guess it wouldn't be hard, changing all 'magic numbers' (3, 2, 9 and 8) to width, width-1, width^2 and width^2-1.

Cheers,
--
-Dick

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

File Attachments

1) coherence.pro, downloaded 120 times