
Subject: Re: Calculate maximum diameter?

Posted by [Paul Van Delst\[1\]](#) on Mon, 06 Feb 2006 23:17:10 GMT

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Jeff N. wrote:

> Yep, it does need to go through the center. I may end up using a
> fitted ellipse as a starting point, so we'll just see what works best.
> Thanks for the ideas!

How do you define the center of your "roughly circular" ROI's? Geometric centroid? Does this have to correspond to a discrete ROI pixel? And how do you define diameter? From one ROI pixel through the "center" to another ROI pixel? Or can the centroid and the opposite side pixel be non-discrete? Depending on how "big" a pixel is compared to your length units, maybe it doesn't matter (e.g. if a length unit was a pixel)

After computing your centroid, why can't you just rotate through 180deg. from one ROI pixel to the next, construct a line from your current pixel through your centroid and determine where it intersects your ROI on the other side? It seems a bit ham-fisted maybe, but it doesn't rely on any particular definition of "roughly circular."

I'm curious as to why you need the maximum diameter of your ROI's. If you have a lot of them, usually a particular orientation is chosen -- with a common defined axis of symmetry assumed to be random with respect to that orientation -- and the dimension of your ROI's along that orientation is used (e.g. to compute statistics on particle sizes).

paulv

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> Jeff
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> kuyper@wizard.net wrote:
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>> Jeff N. wrote:
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>>> Hi folks,
>>>
>>> I have a set of roughly circular ROI's for which I want to compute the
>>> maximum diameter - the longest straight line from one point on the
>>> boundary of the ROI, through the center, to the opposing boundary.
>>
>> Is it essential that it go through the center? In many contexts its
>> more useful to know the length of the longest straight line from any
>> given vertex to any other vertex. There's a pretty obvious $O(N^2)$
>> algorithm for finding that maximum distance.
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