Subject: Re: Calculate maximum diameter?
Posted by Jeff N. on Wed, 08 Feb 2006 23:18:05 GMT
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Paul Van Delst wrote:

> 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)

Yes, I'm defining the center as the geometric centroid. I don't necessarily think that it has to correspond to a discrete pixel, but you are right that this probably doesn't matter, and you guessed the reason why too.

>
> 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 can, and there's a good chance this is what I'll do. I'm trying to decide if the PCA would be more effective though. Plus, I'm going to probably have trouble coding this approach :) I understand that how i'm defining "roughly circular" is important....I think that they're circular enough (not shaped like stars or anything) so that the PCA would work. If this helps, I've done some measurements on these that are the perimeter of the ROI divided by the perimeter of a circle with the same area as the ROI, and these measurements are usually within 30-40% of a circle. (why am i using that kind of measurement? b/c someone else used that method and i'm evaluating it :))

>
> 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).
>
The ROI's are outlines of mineral groups in meteorites (they're chondrules if you're familiar with meteorites). Measurements of this sort are "standards" in meteorite literature - everyone else uses them, so if i'm going to compare my work to anyone else's I've got to use these.

Thanks for your help!

Jeff