
Subject: median downsampling

Posted by [Jonathan Joseph](#) on Wed, 27 Mar 2002 19:09:41 GMT

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This is sort of a follow-up to my previous rebin question. I'm having trouble writing a routine to *efficiently* downsample an 2D array (ala rebin) but using the median value instead of the average value over the box (sub-image) being downsampled into a given pixel.

If my downsampling box-size were guaranteed to be the same dimension in X and Y, I think this problem could be easily solved using the median routine with a "width" argument. That's not guaranteed to be the case though, and I can't see how to do a median filter with different dimensions in X and Y.

I can use methods like those in the astronomy library's boxave.pro to "quickly" (looping only over the number of pixels in the downsampling box) reform the 2d array into a 3d array such that $A[* , i, j]$ gives me all of the pixels from the original image that get downsampled into the single pixel $[i, j]$ in the output image. Unlike total though, I can't do a median or sort across a particular dimension of a multi-dimensional array, so it seems I would still have to do a median operation for each pixel in the downsampled image.

Can anyone think of a way to achieve the desired result w/o the large offensive looping?

Perhaps there's a way to do this using histogram (eh JD?)

-Jonathan
