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Subject: SMOOTH

Posted by [J.D. Smith](#) on Thu, 19 Jun 1997 07:00:00 GMT

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Hi Folks,

I've encountered what may be a serious error in the SMOOTH algorithm. It appears SMOOTH suffers catastrophic roundoff errors with boxsizes as small as 3x3 on some floating point data. What's more, the error is position dependent inside the array, making strange "band" structures in the smoothed image. In my case, I was smoothing a positive definite image, and the smoothed image contained bands of negative values! I think arrays which contain a wide dynamic range of values are most susceptible. Converting to double precision seems to solve the problem, although I cannot see why double precision would be needed for what seems naively to be a simple problem. I am using SunOs 4.1.3 on a Sparc IPC. Has anyone else encountered this error? Does anyone know what tricks IDL uses to speed the SMOOTH process?

Thanks,

JD

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