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[illegible]

[illegible]


```

[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
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[0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1],$
[0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1],$
[0, 0, 1, 1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 1, 1, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0],$
[0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0] ]

```

```

window,0

```

```

!P.multi = [0,4,1]

```

```

smoth = 7

```

```

kernel = replicate(1,smoth,smoth)

```

```

smoot = smooth(float(diffmap),smoth,/edge_truncate) gt 0

```

```

conv = convol(float(diffmap),kernel,/edge_truncate,center=smoth/2) GT 0

```

```

tvsc1, rebins(diffmap,45,286,/sample),0,0

```

```

tvsc1, rebins(smoot,45,286,/sample),50,0

```

```

tvsc1, rebins(conv,45,286,/sample),100,0

```

```

tvsc1, rebins(smoot-conv,45,286,/sample),150,0

```

```

stop

```

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END

```

Subject: Re: Bug in IDL {alpha OSF unix 4.0.1} SMOOTH()

Posted by [steinhh](#) on Tue, 19 Nov 1996 08:00:00 GMT

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> For some reason, the smoothing introduces non-zero values in the result array along
> one column, and I cannot understand why..

Here I go, following up my post after only a few minutes... I just realized that SMOOTH is probably using some kind of FFT convolution to perform the smoothing operation, even though the /edge_truncate was set. With fourier transforms back and forth, (numerical) errors of this magnitude are not uncommon, one should even **expect** them (and therefore treat the results with care, like checking "smooth(...) gt 1e-3" rather than "... gt 0").

So, it's a **feature**, not a bug, I guess :-)

Funny thing, what tipped me off was that when I rewrote my program to use CONVOL instead of SMOOTH, the speed went way down.

Stein Vidar H. Haugan
