

## Re: Add Noise

**Source:** <http://coding.derkeiler.com/Archive/Fortran/comp.lang.fortran/2004-03/1003.html>

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**From:** Gordon Sande ([g.sande\\_at\\_worldnet.att.net](mailto:g.sande_at_worldnet.att.net))

**Date:** 03/18/04

Date: Thu, 18 Mar 2004 17:04:19 -0400

In article <m14qslj3f8.fsf@macfortran.local>, Richard Maine <nospam@see.signature> wrote:

>*Subject: Re: Add Noise*

>*From: Richard Maine <nospam@see.signature>*

>*Organization: NASA Dryden*

>*Date: 18 Mar 2004 12:39:07 -0800*

>*Newsgroups: comp.lang.fortran*

>

>*Rich Townsend <rhdt@barVOIDtol.udel.edu> writes:*

>

>> *Joost VandeVondele wrote:*

>> > *tholen@antispam.ham wrote in message news:<dJg6c.7907\$h85.3597@twister.socal.rr.com>...*

>

>> > *noisy\_vector=vector*

>> > *DO i=1,N*

>> > *call random\_number(noise)*

>> > *noisy\_vector=noisy\_vector+(noise -0.5)\*scale*

>> > *ENDDO*

>>

>> *Still ain't Gaussian...*

>

>*But by the central limit theorem, it approaches Gaussian as N*

>*approaches infinity (assuming you normalize scale appropriately).*

>*And in this case, numbers on the order of 12 or so are a decent*

>*approximation to infinity. I've seen code that uses this kind*

>*of method to approximate Gaussians (and I'm thinking I recall*

>*N=12 being used; might have even been N=6).*

The variance of the common uniform is 1/12 so the sum of 12 of them has the right variance of 1.0. It is a workable approximation at 1:00 in the morning and you need a quick and dirty fix by 1:10, providing you comment it as being not much better than nothing.

>*Perhaps not the world's most efficient method, but it is hard*

>*to get simpler, and for some applications it is fine.*

>

>*Hey, if you needed to be really picky about things, you'd be using a*

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>3rd party generator instead of whatever the compiler vendor happened

>to throw in for random\_number.

>

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>Richard Maine / Good judgment comes from experience;

>email: my.first.last at org.domain / experience comes from bad judgment.

>org: nasa, domain: gov / -- Mark Twain