Subject: Re: Poisson Noise
Posted by pgrigis on Tue, 15 Mar 2011 14:28:13 GMT
View Forum Message <> Reply to Message

On Mar 11, 8:54 pm, "M. Katz" <MKatz...@yahoo.com> wrote:
> I'm wondering if anyone has a ready-made Poisson-noise simulator for
> images that works in the following way.
>
> Start with a simulated ideal image as input, where each pixel contains
> a number of photons as the intensity. It could be integer or floating-
> point. Then use a function P(img) to return a Poisson-noise-added
> version of the image. The key is that noise at each pixel scales with
> the intensity appropriately, and not uniformly.
>
> For large numbers of photons, where the Poisson noise has an RMS of
> Sqrt(N) and behaves like a Gaussian distribution, I could just add
> noise to img1 like this
>
> img2 = 0L > ROUND(img1 + RANDOMN(seed, Nx, Ny)*SQRT(img1))
>
> But for low photon numbers, this approximation isn't valid.
>
> Thanks,
> M.

IDL has a built-in way too:

a=randomu(seed,poisson=10.0)

Ciao,
Paolo