Dear Klemen,

Thanks for the helpful post.

I actually need to compute derivatives, specifically the gradients of experimentally measured
holograms.   Roberts and Sobel are not appropriate for my application because they compute the
magnitude of the gradient, rather than the gradient itself.   As an example, I've uploaded a typical
noisy hologram of a colloidal sphere together with the x-component of its gradient computed with
finite differences, and the equivalent component computed with the SG filter:

http://physics.nyu.edu/grierlab/noisygradient.png

For what it's worth, the SG version is more useful for my subsequent analysis.

All the best,

David