Subject: Re: Goldstein Phase Unwrapper
Posted by R.G. Stockwell on Thu, 13 Nov 2003 16:37:03 GMT
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"David Fanning" <davidf@dfanning.com> wrote in message
news:MPG.1a1c6c655062bc0d989681@news.frii.com...
> Folks,
>
> I have need to implement a 2D Goldstein Phase Unwrapper in IDL
> for for a client. I am reading the book Two-Dimensional
> Phase Unwrapping by Ghiglia and Pritt. They provide C code, but--
> naturally--we prefer this in IDL. :-)
>
> Has anyone gone to the trouble of doing this already,
> and would you be willing to share the code with me?
> I can offer heart-felt thanks, and a few (mostly) secret
> clues into the world of IDL object programming in
> exchange. :-)
>
> Cheers,
>
> David
>

Hi David,
Sorry, no IDL code, but I can get a homegrown 2D phase unwrapper
in fortran if you are interested in that. I was discussing this very
problem
with a colleague not too long ago. In fact I found the reference to that
book
(Ghiglia) and was going to hussle over to CU to take it out of the library.

One idea I had to deal with the directional ambiguities of phase unwrapping
in 2d
was to calculate gradients everywhere (and by employing the nyquist sampling
rate,
reducing the gradients everywhere to a correct value), then integrating this
back
into the phase surface. Of course, this does not directly address the noisy
case,
and you may need a more sophisticated algorithm.

I did come across a method using neural networks [1]
http://www.ece.utexas.edu/~bevans/papers/2000/phaseUnwrappin g/odt2000.pdf
also there may be some useful links here
http://www.ee.ubc.ca/sar/people/weix/pu.html

If the goldstein algorithm in IDL does become publicly available, I'd be interested.

Cheers,
bob

[1] not that I would ever suggest anyone use a neural network, :)
