
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/phaseUnwrapping/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, :)
