
Subject: Re: POLYWARP question.

Posted by [Craig Markwardt](#) on Mon, 14 Jun 1999 07:00:00 GMT

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Octavi Fors <octavi@fajnm1.am.ub.es> writes:

>
> Hi everybody,
>
> this is regarding POLYWARP function, in particular DEGREE argument. As
> far as I
> understood by the Online Help, POLYWARP accepts the following polynomial
> models
> depending on the value of DEGREE:
>
> ... details omitted ...
>
> This is fine, but poor in flexibility: what happens if I want to
> consider a model like this, which accounts for 1st. degree crossed XY
> terms and 2nd. degree in X and Y?
>
> $X_i = k_{x00} + k_{x01} X_o + k_{x10} Y_o + k_{x11} X_o Y_o + k_{x02} X_o^2 + k_{x20} Y_o^2$
> $Y_i = k_{y00} + k_{y01} X_o + k_{y10} Y_o + k_{y11} X_o Y_o + k_{y02} X_o^2 + k_{y20} Y_o^2$
>
>
> Does anybody know any implementation/patch of POLYWARP which permits
> more freedom in considering
> coefficients to obtain?

You may be asking for too much. I think routines such as POLYWARP implement a simple matrix inversion (Kramer's rule?) to determine the polynomial coefficients, and thus you are stuck with all coefficients. The polynomial you are interested in fitting is degree two, with a bunch of terms "missing", ie coefficients are to be forced to zero.

Since the source code is available in POLYWARP.PRO, you may be able to modify this to your needs. I can't help you there.

I recommend however that you may be able to solve your problem more straightforwardly by a curve fitting procedure where you explicitly write out the polynomial you are interested in fitting. Your options are:

CURVEFIT - simple, fast - IDL distribution

LMFIT - simple, slow - IDL distribution

MPFITFUN - robust, medium speed -

<http://cow.physics.wisc.edu/~craigm/idl/idl.html> (get MPFIT and MPFITFUN)

Best of luck,

Craig

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Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
