Subject: Re: Savitzky-Golay filter
Posted by wlandsman on Wed, 11 Nov 2009 18:18:31 GMT
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On Nov 11, 5:12 am, Dav_Poreh <d.po...@gmail.com> wrote:
> Folks
> Hi;
> I am running Savitzky-Golay filter to take the derivations (first and
> second order). In comparison to derive function there is remarkable
> difference between Savitzky-Golay and routine derivation. I don't know
> which one is correct. Does this back to Taylor approximation or
> something else?
> Any help kindly appreciated
> Cheers

First of all, there is no single "correct" answer. You don't have a continuous function to compute a derivative, but rather a sampled, finite set of points. In the Savitzky-Golay filter one uses a local polynomial approximation at each point, and then takes a derivative of the polynomial. (So the derivative depends on the order of the polynomial approximation, among other things.) You don't say what your other method of computing the derivative is, but deriv.pro uses a 3 point interpolation.

I would expect the two methods to give a similar answer for a smooth function, but wouldn't be surprised to see them differ for a poorly-sampled, or non-smooth function.

--Wayne