Subject: Re: poly_fit for less number of points
Posted by Jeremy Bailin on Mon, 06 May 2013 13:48:57 GMT
View Forum Message <> Reply to Message

On 5/5/13 6:03 PM, David Fanning wrote:
> Craig Markwardt writes:
>
>> This fit,
>> res = poly_fit(x-mean(x), y, 2)
>> gives a smooth fit.
>
> What is the principle here that made you think of this solution and
> caused it to work?
>
> Cheers,
>
> David
>

Roundoff error in the typical fitting routines. Look at the OP's
original x values:

x = [3932.9321,3933.0452,3933.1162,3933.2514,3933.3517,3933.4271 ]

By switching to x-mean(x):

IDL> print, x-Mean(x)
-0.255371 -0.142334 -0.0712891 0.0639648 0.164307
0.239502

The effective precision of the values is 4 extra digits. Within the
polynomial fitting code, they're going to be squared, so roundoff error
in the original data is going to get bad, but the extra 4 digits keep it
under control.

-Jeremy.