Subject: BUG in IDL 5.0.2 VERSION OF POLY_FIT
Posted by Jack Saba on Tue, 16 Sep 1997 07:00:00 GMT
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IDL version: 5.0.2
Platform and OS: HP 9000/700 HP-UX 10.20

Description of Behavior:

POLY_FIT returns "Singular matrix detected" with data that ran fine
under IDL 4.

Example Code:

t = FINDGEN(1000)
Unconvolved = a 1000-element perfect Gaussian centered near t=500.
UFit = GAUSSFIT (t, Unconvolved, UCoefs)

```
>  % Compiled module: GAUSSFIT.
>  % Compiled module: POLY_FIT.
>  % POLY_FIT: Singular matrix detected.
>  % Error occurred at:  POLY_FIT         104
>  /usr/local/rsi/idl_5/lib/poly_fit.pro
>  %                    GAUSSFIT         161
>  /usr/local/rsi/idl_5/lib/gaussfit.pro
>  %                    $MAIN$           45 anal.pro
```

Known Workarounds or Fixes:

See below

RSI Technical Support Response:

The problem you are experiencing is from an error introduced into
POLY_FIT(). The following lines should be changed such that the error
does not occur -- on lines 103/104 (I believe) of POLY_FIT(), change

```
CORRM = INVERT(CORRM, status)   ;INVERT MATRIX.
      if status ne 0 then message, "Singular matrix detected."
```

to

```
CORRM = INVERT(CORRM, status)   ;INVERT MATRIX.
```

```
    if status eq 1 then message, "Singular matrix detected.", $
                /INFORMATIONAL  ;optional INFORMATIONAL keyword
```

The condition exists because a "2" is returned in the STATUS positional parameter for ill-conditioned Vander Monde matrices. Often with these matrices, they are ill-conditioned though the solution from POLY_FIT() is sound.

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