
Subject: Re: Non-linear data selection

Posted by [David Fanning](#) on Sun, 16 May 2010 00:27:41 GMT

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Joe Daal writes:

- > There is an interesting problem that I often come across.....
- > I have a scattered dataset of x and y, say 1000 elements each. The
- > data could be of any shape, for now, let's assume it is scattered
- > all over the X-Y window.
- >
- > There is straight line ($y=mx+b$, could be some other curve as well)
- > that that crosses the plot, I need to select all data points this
- > line.
- > If it is just a one value for y, the WHERE statement is ok, but how to
- > do this?

```
x = Randomu(-3L, 100) * 10
```

```
y = Randomu(-5L, 100) * 10
```

```
m = 0.5
```

```
b = 3.25
```

```
yfit = m*x+b
```

```
aboveIndices = Where((y GE yfit) EQ 1, count)
```

```
Print, StrTrim(count,2) + ' points lie above the line.'
```

```
Plot, x, y, /NoData, Background=FSC_Color('white')
```

```
OPlot, x, y, PSYM=2, SYMSIZE=0.5, Color=FSC_Color('sky blue')
```

```
OPlot, x[aboveIndices], y[aboveIndices], PSYM=4, Color=FSC_Color('red')
```

```
OPlot, x, yfit, LINESTYLE=2
```

Cheers,

David

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Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Sepore ma de ni thui. ("Perhaps thou speakest truth.")
