FTest

September 23, 2015

In [1]:
```
import pandas as pd
```

In [2]:
```
alldat = pd.read_pickle("JustExtraSamples.p")
```

In [3]:
```
grouped_initial = alldat.groupby(['Soffset','Doffset'])

        groups = {}
        for a,b in grouped_initial:
            group = b[['R','x','y','z','mag','Soffset','Doffset']]
            groups[a] = {'means':group.groupby("mag").mean(),
                         'vars':group.groupby("mag").var(ddof=1),
                        'stds':group.groupby("mag").std(ddof=1)}
```

In [4]:
```
from scipy.stats import f

        S1D0vS0D1_15_pval = f.cdf(groups[(1,0)]['vars'].R.iloc[0]/groups[(0,1)]['vars'].R.iloc[0] \
                                  ,29,29)
        S0D1vS1D0_15_pval = f.cdf(groups[(0,1)]['vars'].R.iloc[0]/groups[(1,0)]['vars'].R.iloc[0] \
                                  ,29,29)

        S1D0vS0D1_4_pval = f.cdf(groups[(1,0)]['vars'].R.iloc[-1]/groups[(0,1)]['vars'].R.iloc[-1] \
                                 ,29,29)
        S0D1vS1D0_4_pval = f.cdf(groups[(0,1)]['vars'].R.iloc[-1]/groups[(1,0)]['vars'].R.iloc[-1] \
                                 ,29,29)

        print('''S1D0 v S0D1 @ 1.5 F = {} p = {} => S1D0 < S0D1
        S1D0 v S0D1 @ 4.0 F = {} p = {} => S1D0 > S0D1
        '''.format(groups[(1,0)]['vars'].R.iloc[0]/groups[(0,1)]['vars'].R.iloc[0],S1D0vS0D1_15_pval \
                   ,groups[(0,1)]['vars'].R.iloc[-1]/groups[(1,0)]['vars'].R.iloc[-1],S0D1vS1D0_4_pval)
```

```
S1D0 v S0D1 @ 1.5 F = 0.17808127558254636 p = 6.431557549971022e-06 => S1D0 < S0D1
S1D0 v S0D1 @ 4.0 F = 0.16192360482434365 p = 2.346679599189309e-06 => S1D0 > S0D1
```

In [ ]:
```
```