

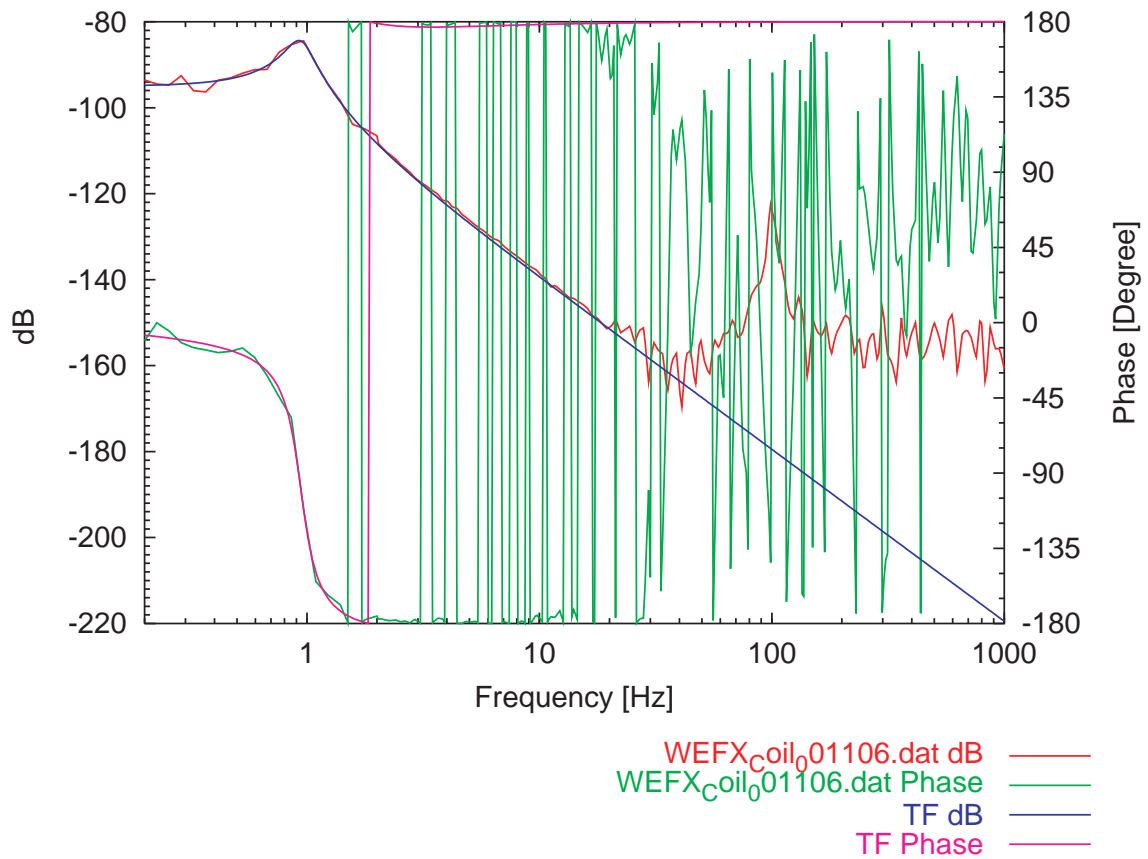
# Recombine3: Suspension Transfer Functions

National Astronomical Observatory, TAMA project

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April 10, 2001

## WE Front Length Coil



Filename: WEFX\_Coil\_001106.eps

Measured: 2000/11/06

Actuator: Coil

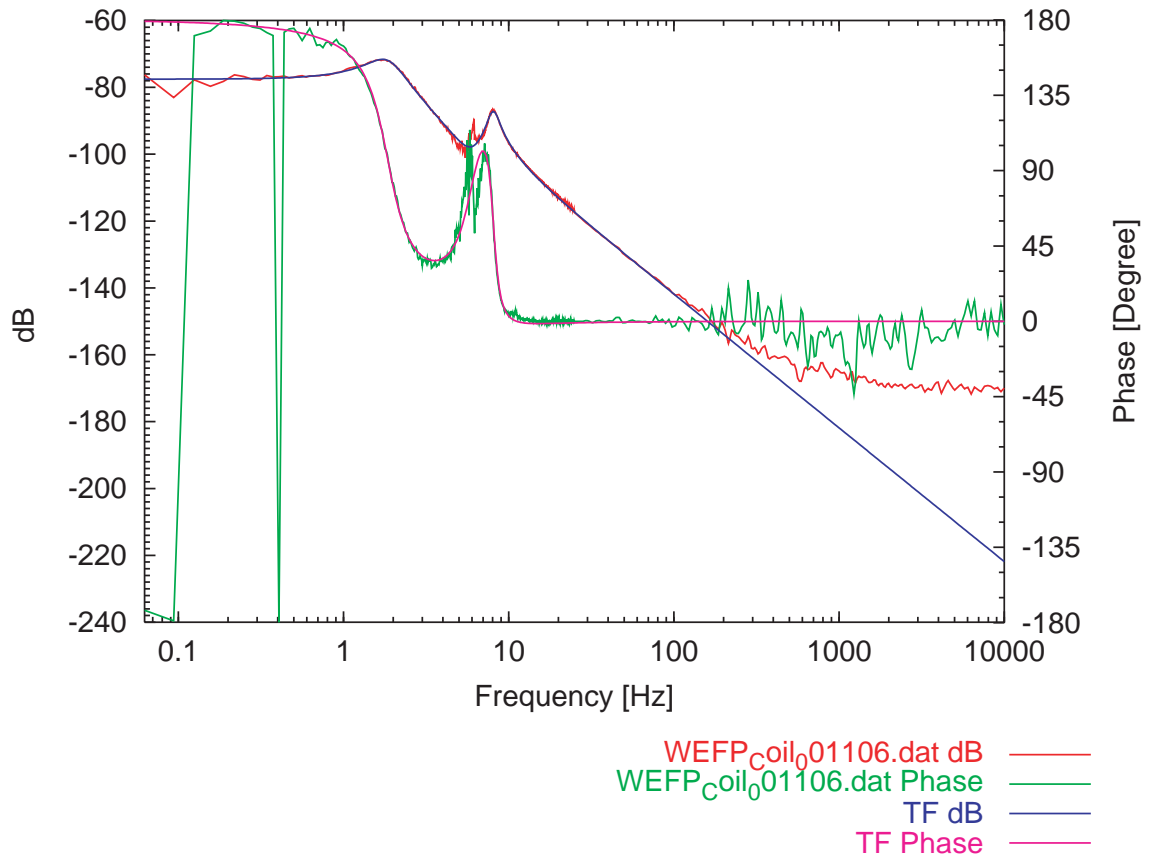
pole 576.0054m 369.51662m

pole 940.15864m 3.8718129

zero 704.17171m 334.72491m

factor 17.954831u

## WE Front Pitch Coil



Filename: WEFP\_Coil\_001106.eps

Measured: 2000/11/06

Actuator: Coil

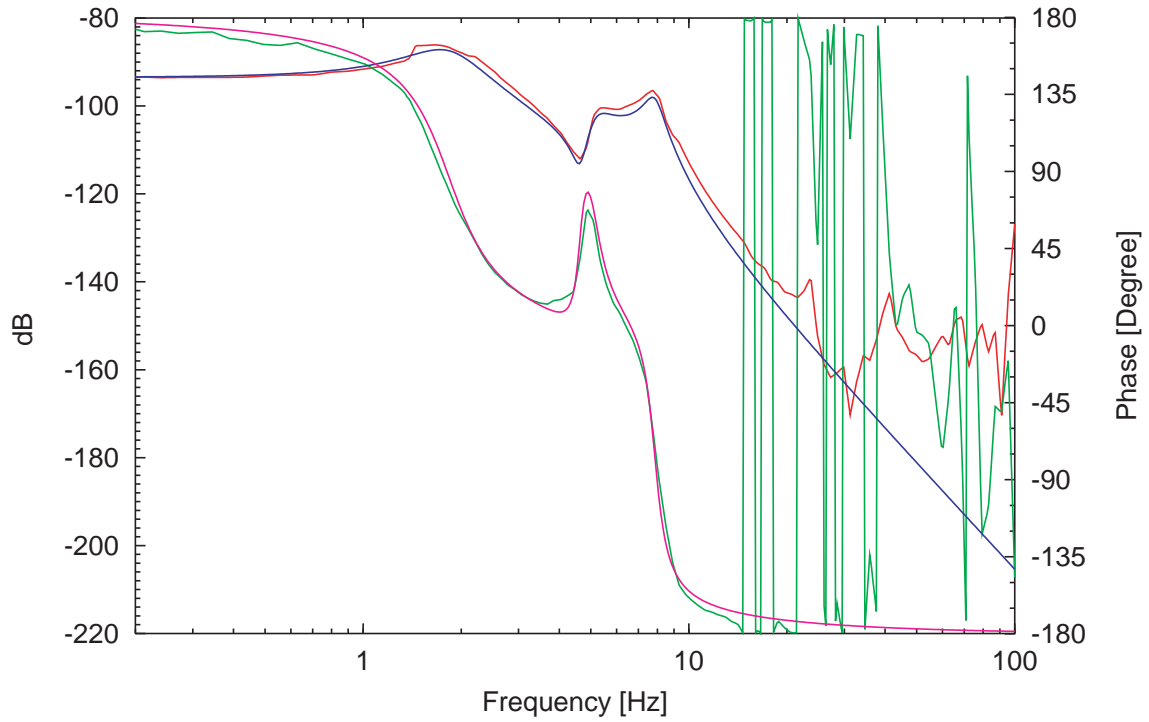
pole 1.8571729 1.9704863

pole 8.0596316 6.2027175

zero 6.0660685 2.2868657

factor -132.60375u

## WE Front Pitch PZT

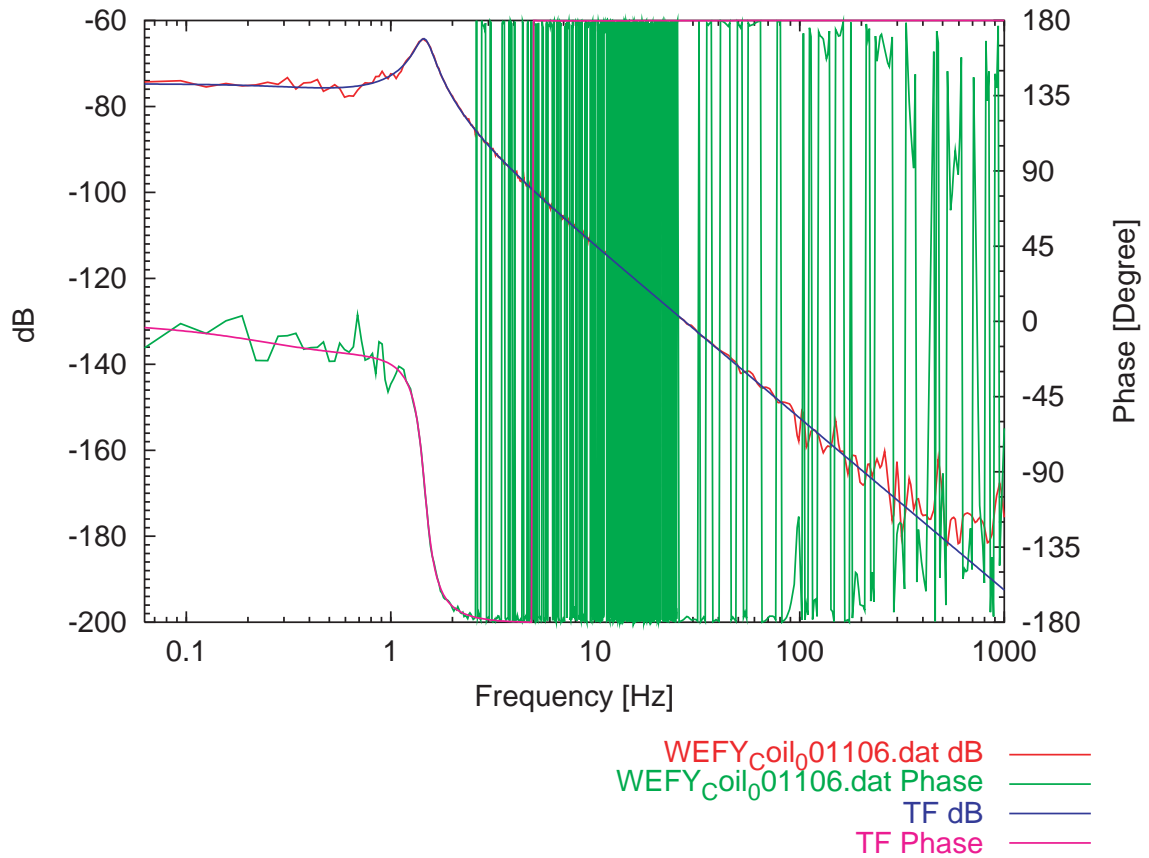


WEFP<sub>P</sub>ZT<sub>0</sub>01106.dat dB ——— TF dB ———  
WEFP<sub>P</sub>ZT<sub>0</sub>01106.dat Phase ——— TF Phase ———

Filename: WEFP\_PZT\_001106.eps  
 Measured: 2000/11/06  
 Actuator: PZT

pole 1.838965 1.9543587  
 pole 7.8533994 7.4993756  
 pole 5.0990797 5.3614304  
 zero 4.6369576 10.803121  
 factor -21.195962u

## WE Front Yaw Coil



Filename: WEFY\_Coil\_001106.eps

Measured: 2000/11/06

Actuator: Coil

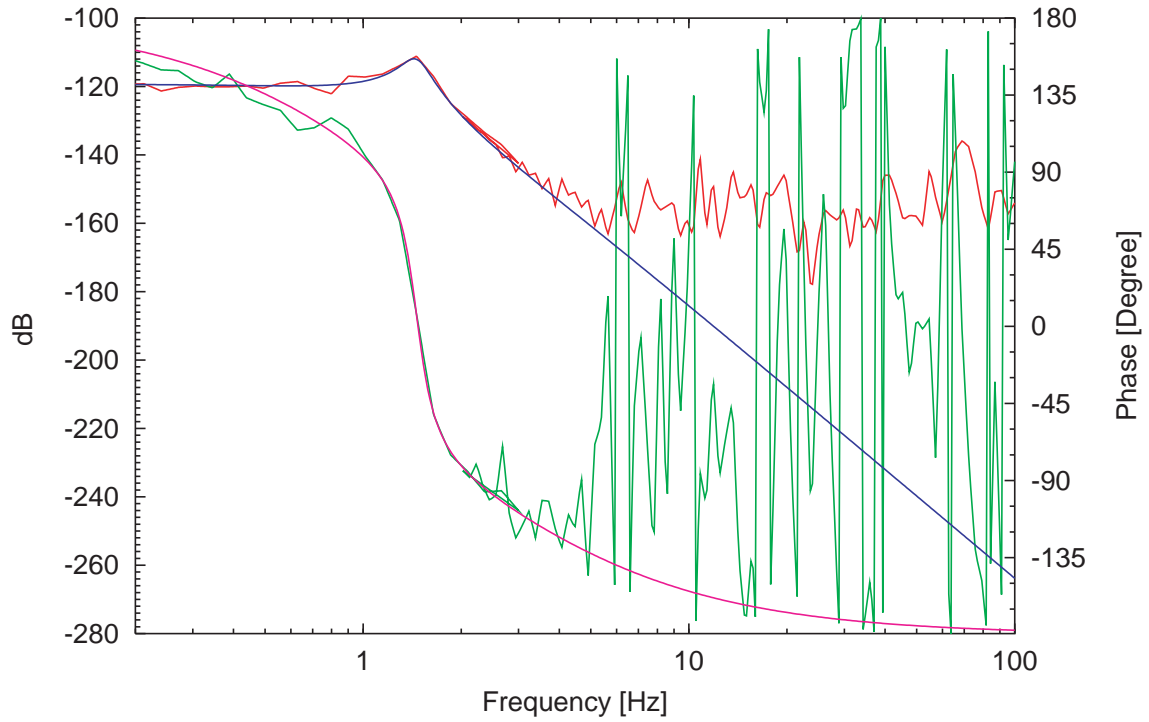
pole 934.65618m 365.84187m

pole 1.4644712 5.0954234

zero 1.2040603 416.88415m

factor 183.27391u

# WE Front Yaw PZT

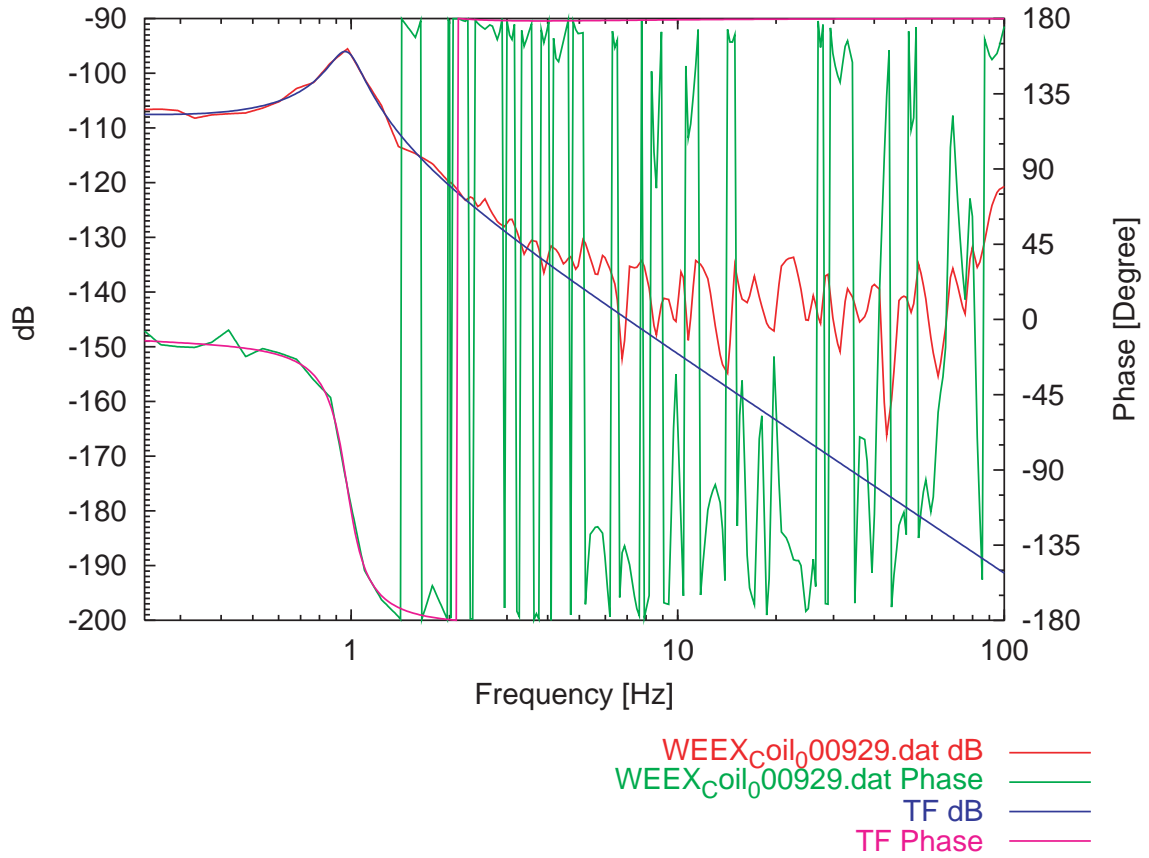


WEFY\_PZT\_01106.dat dB ——— TF dB ———  
WEFY\_PZT\_01106.dat Phase ——— TF Phase ———

Filename: WEFY\_PZT\_001106.eps  
Measured: 2000/11/06  
Actuator: PZT

pole 1.4603232 5.2029964  
pole 1.6696571 390.15122m  
factor -1.0828428u

## WE End Length Coil



Filename: WEEX\_Coil\_000929.eps

Measured: 2000/09/29

Actuator: Coil

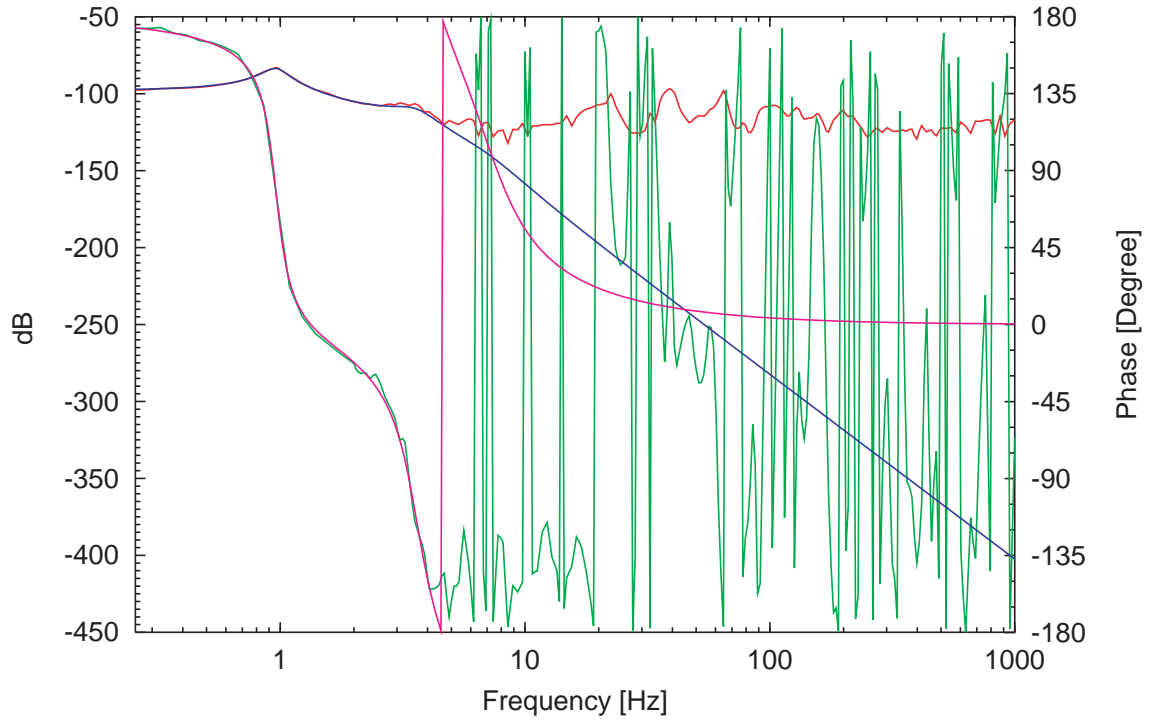
pole 504.72791m 336.87317m

pole 970.3006m 4.7142916

zero 639.71993m 345.91816m

factor 4.5971798u

# WE End Length PZT

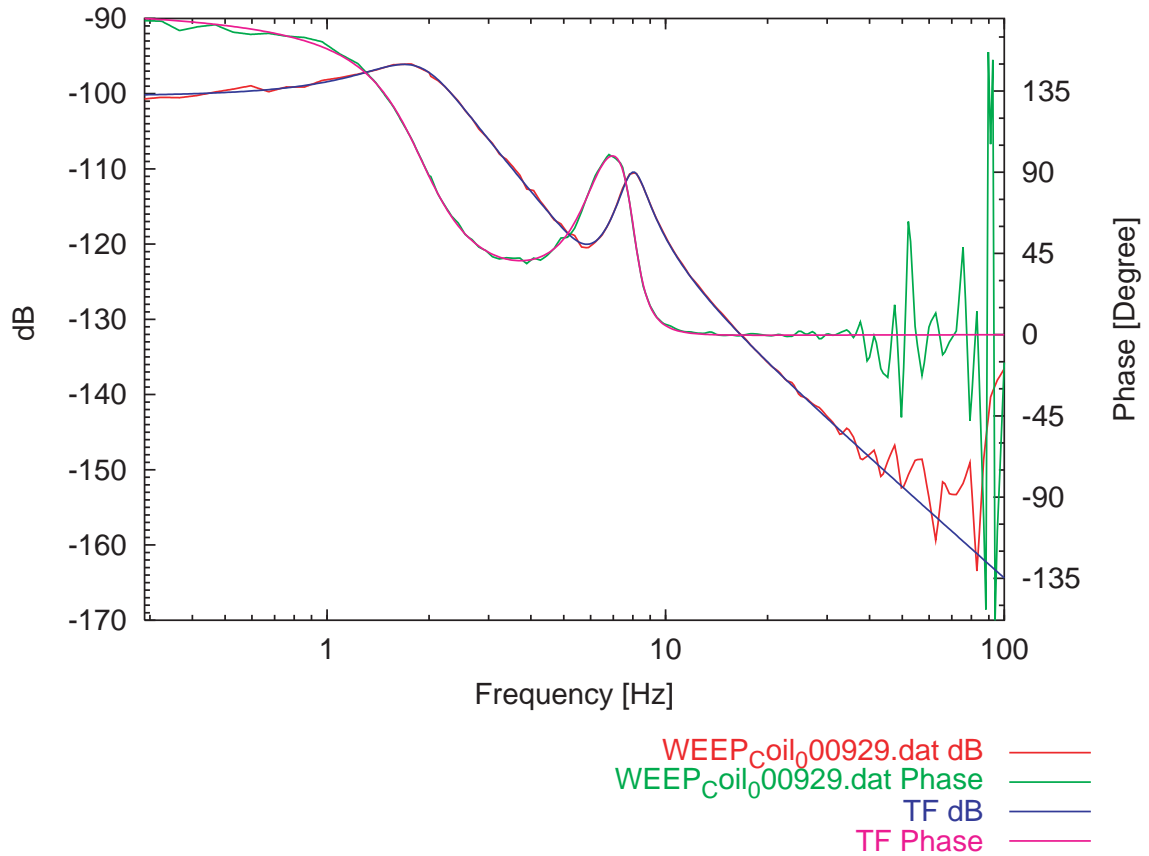


WEEXPZT\_00929.dat dB ——— TF dB ———  
WEEXPZT\_00929.dat Phase ——— TF Phase ———

Filename: WEEXPZT\_00929.eps  
Measured: 2000/09/29  
Actuator: PZT

pole 960.40551m 4.7687635  
pole 3.6024109 2.7201021  
pole 7.0149421 1.3324394  
factor -12.892093u

## WE End Pitch Coil



Filename: WEEP\_Coil\_000929.eps

Measured: 2000/09/29

Actuator: Coil

pole 1.9054777 1.5782662

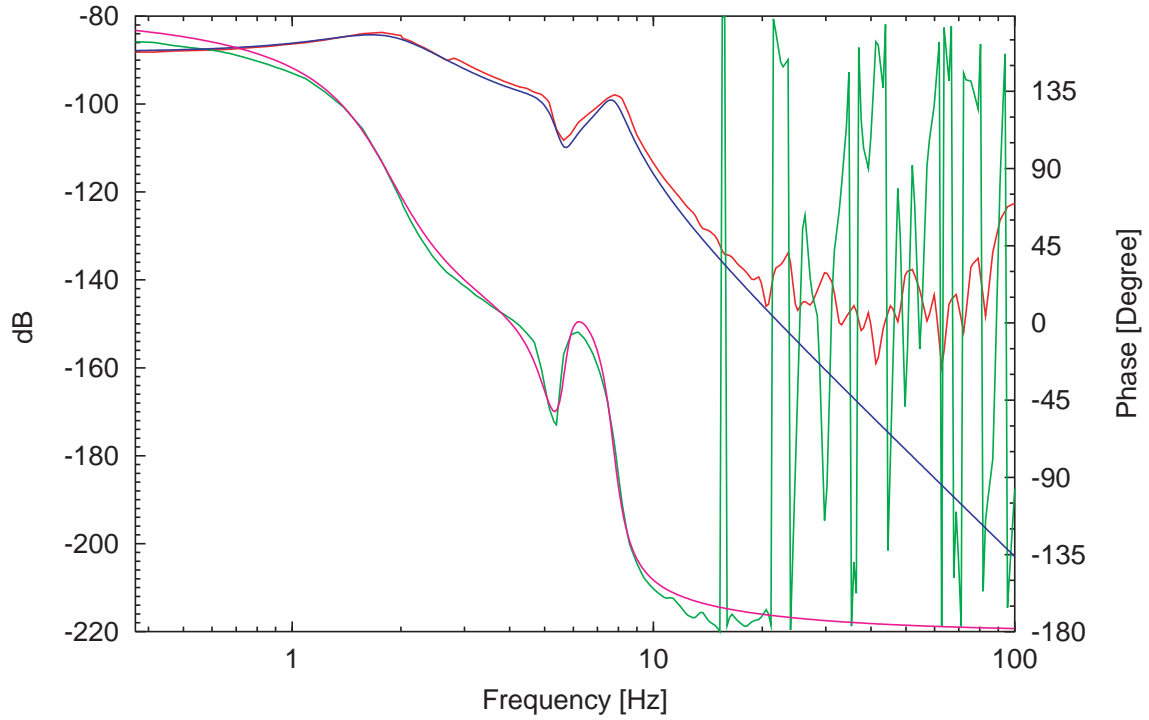
pole 8.0215206 5.7406313

zero 6.1264058 2.2513504

factor -9.659452u



# WE End PZT Coil

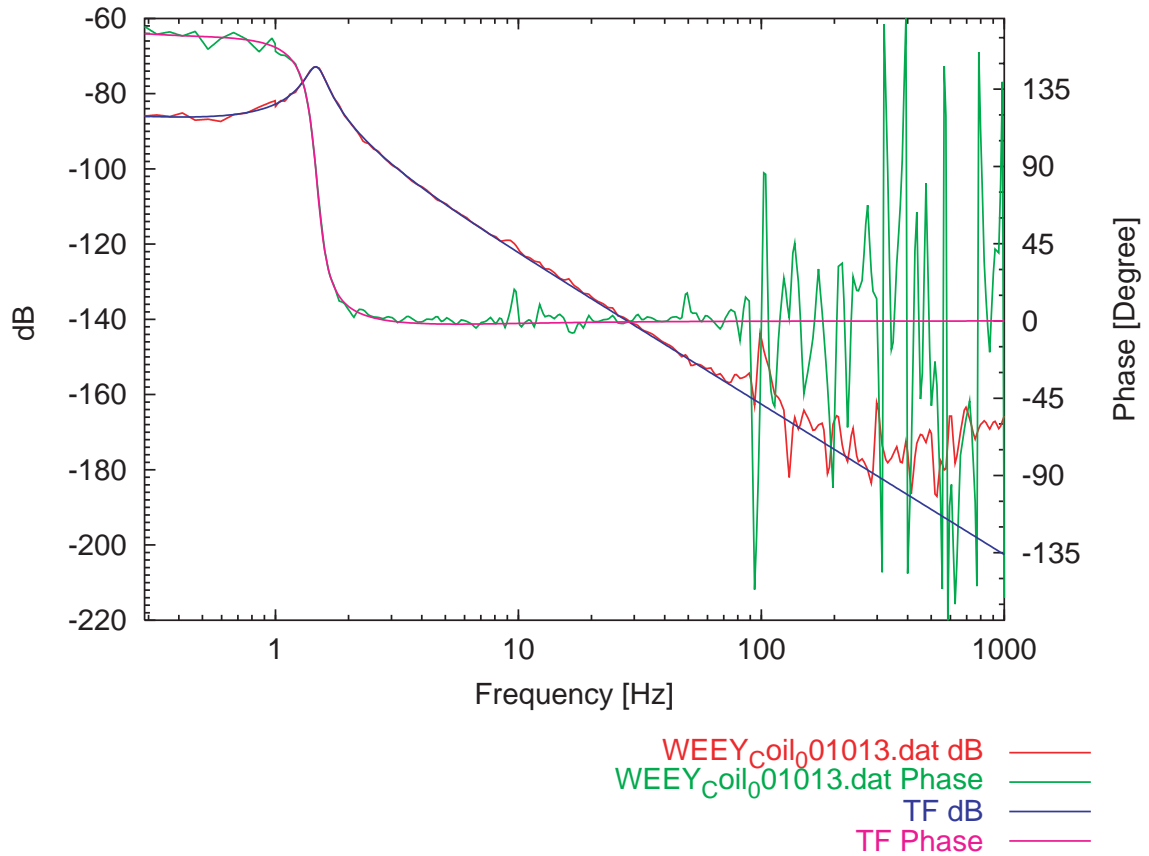


WEEP\_PZT\_000929.dat dB ——— TF dB ———  
WEEP\_PZT\_000929.dat Phase ——— TF Phase ———

Filename: WEEP\_PZT\_000929.eps  
 Measured: 2000/09/29  
 Actuator: PZT

pole 1.8812192 1.3715206  
 pole 7.7377484 6.4316274  
 pole 5.2220776 3.8651542  
 zero 5.6568936 9.1819918  
 factor -39.303344u

## WE End Coil Yaw



Filename: WEEY\_Coil\_001013.eps

Measured: 2000/10/13

Actuator: Coil

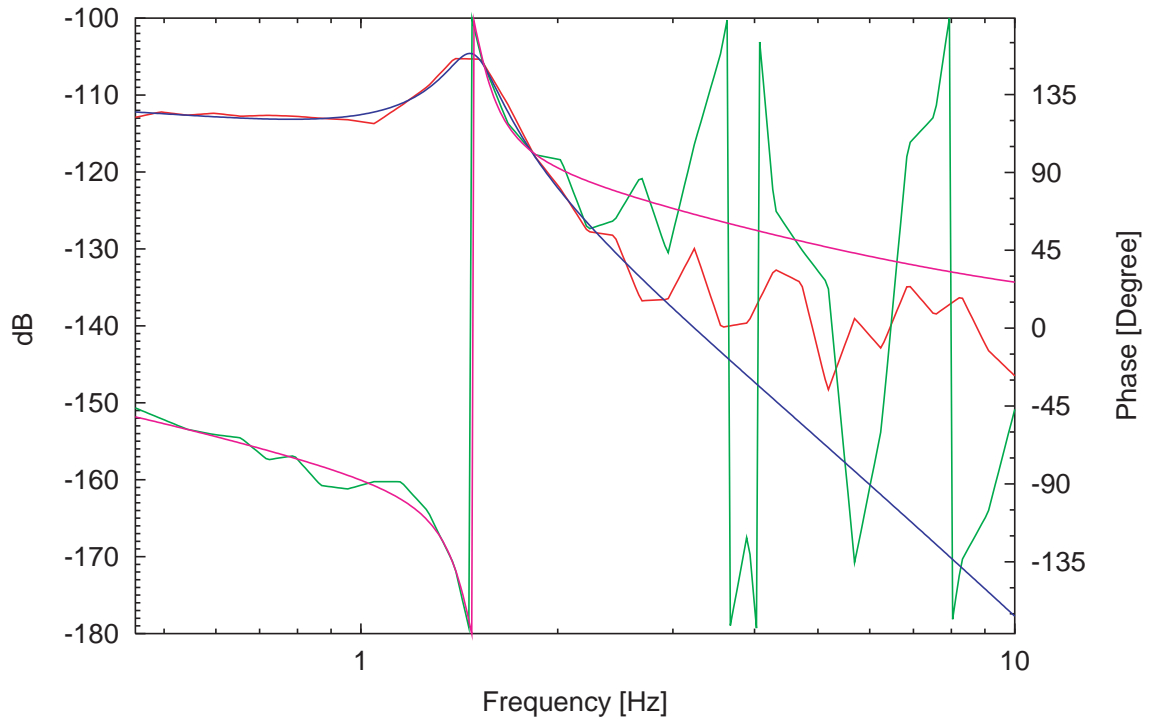
pole 858.27593m 293.0472m

pole 1.4775355 5.8265298

zero 1.0996081 316.83123m

factor -56.020237u

## WE End PZT Yaw



WEEY<sub>p</sub>ZT<sub>0</sub>01013.dat dB ——— TF dB ———  
WEEY<sub>p</sub>ZT<sub>0</sub>01013.dat Phase ——— TF Phase ———

Filename: WEEY\_PZT\_001013.eps

Measured: 2000/10/13

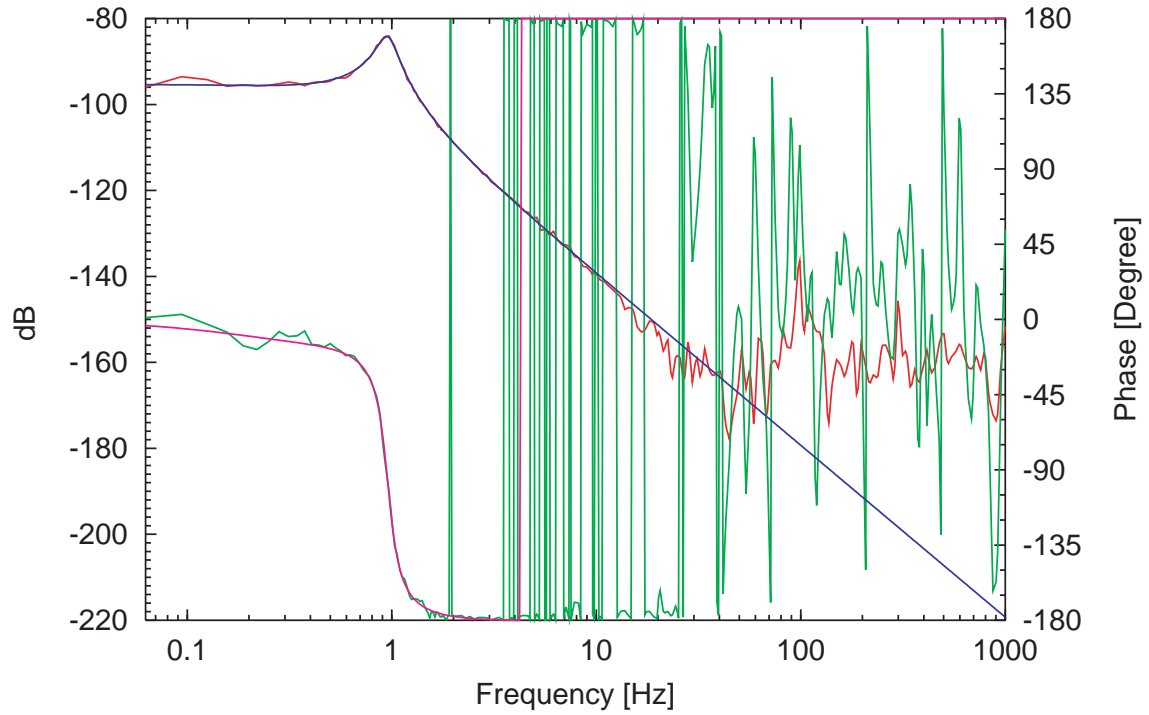
Actuator: PZT

pole 1.486515 6.4168696

pole 1.4357925 311.45836m

factor 3.0188961u

## NS Front Length Coil



NSFX\_Coil\_01031.dat dB ———  
NSFX\_Coil\_01031.dat Phase ———  
TF dB ———  
TF Phase ———

Filename: NSFX\_Coil\_001031.eps

Measured: 2000/10/31

Actuator: Coil

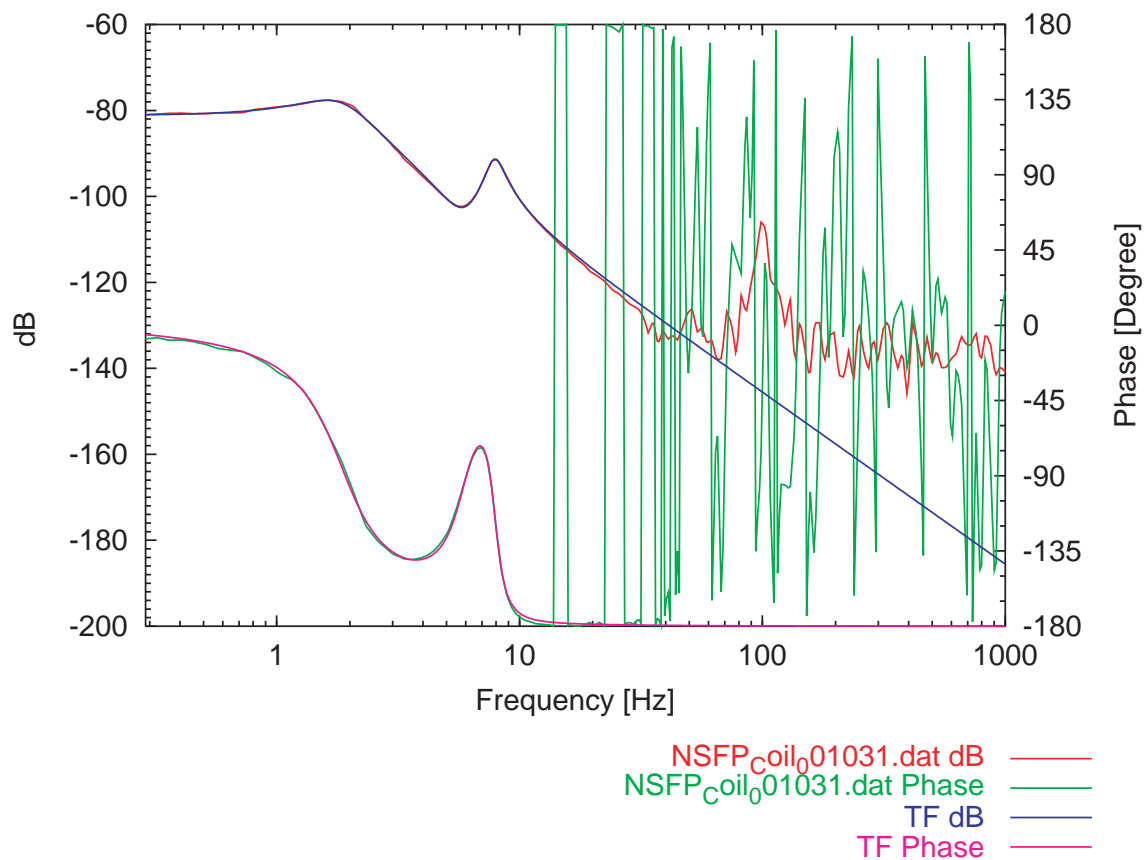
pole 954.78702m 4.7334997

pole 647.66545m 385.38783m

zero 776.09301m 407.03399m

factor 17.092986u

## NS Front Pitch Coil



Filename: NSFP\_Coil\_001031.eps

Measured: 2000/10/31

Actuator: Coil

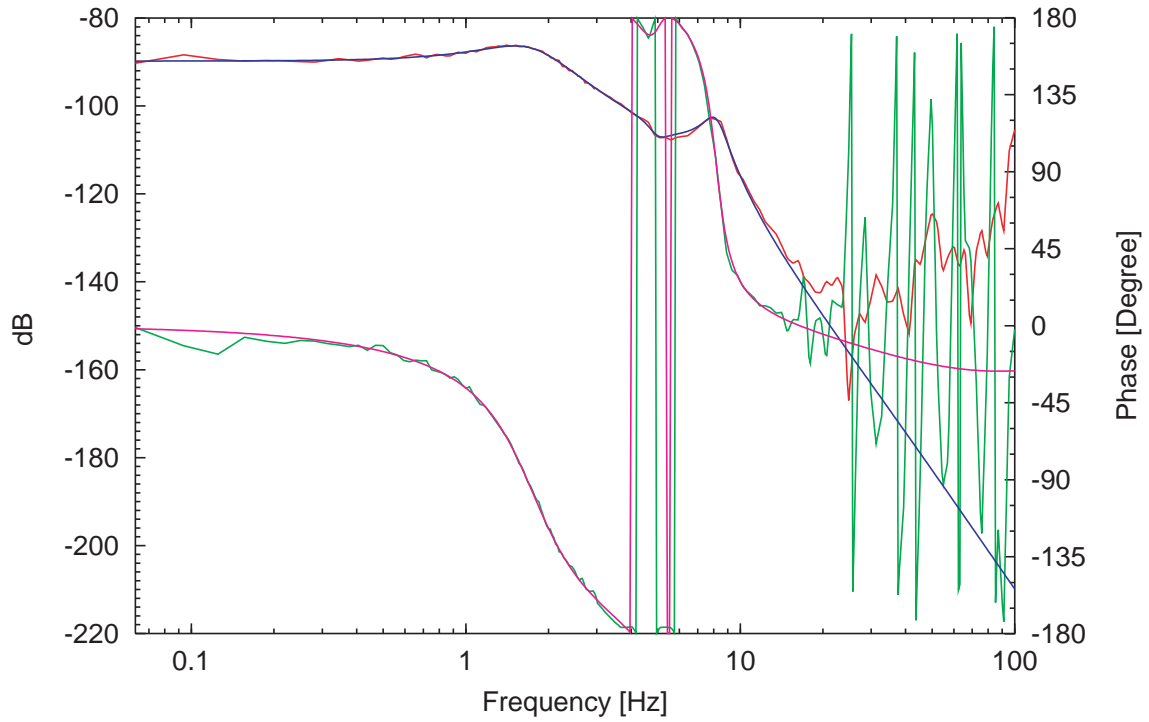
pole 1.8551652 1.4491349

pole 7.8967337 6.0061179

zero 5.9635561 2.6878706

factor 87.438616u

# NS Front Pitch PZT



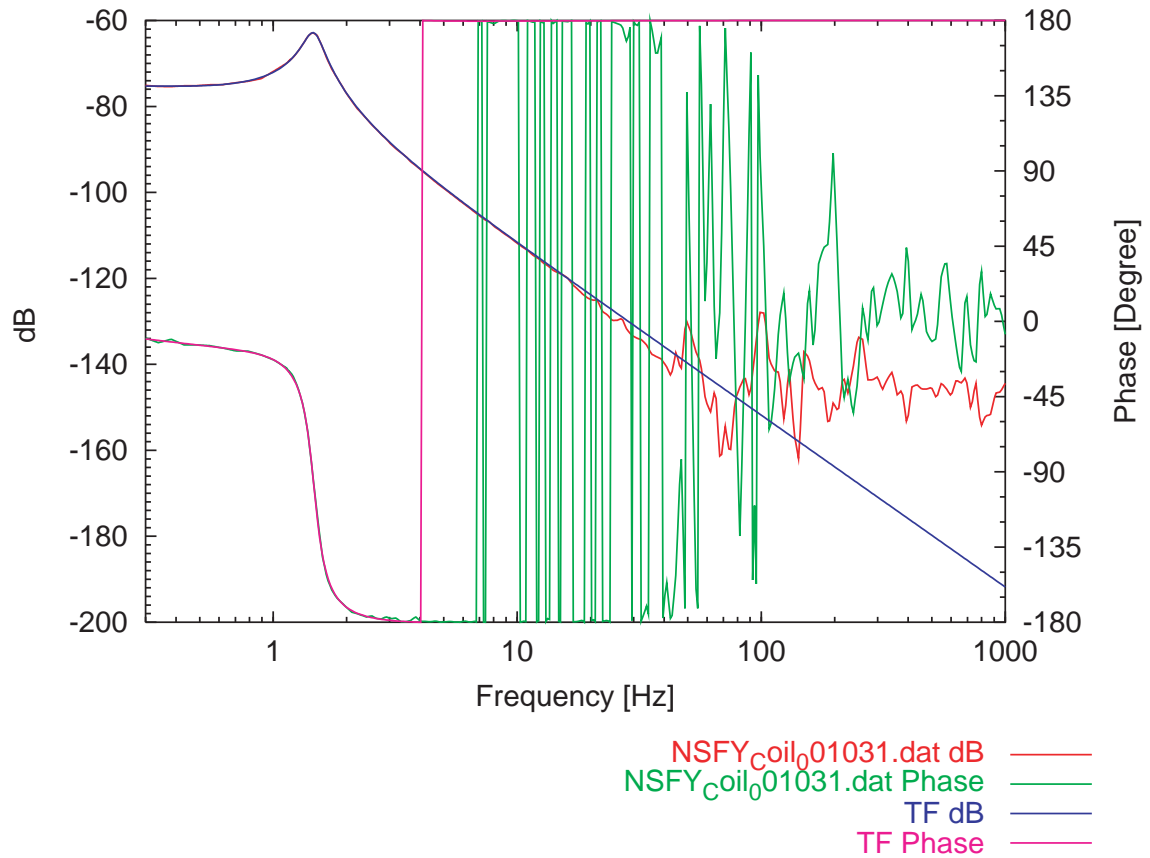
NSFP<sub>p</sub>ZT<sub>0</sub>01031.dat dB ————  
NSFP<sub>p</sub>ZT<sub>0</sub>01031.dat Phase ————  
TF dB ————  
TF Phase ————

Filename: NSFP\_PZT\_001031.eps  
 Measured: 2000/10/31  
 Actuator: PZT

```

pole 1.7503127 1.350007
pole 4.9179872 3.6216401
pole 8.159577 5.3544091
zero 4.9970811 4.9804463
pole 12.433026 242.87525m
zero 21.718033 155.96287m
factor 32.394108u
    
```

## NS Front Yaw Coil



Filename: NSFY\_Coil\_001031.eps

Measured: 2000/10/31

Actuator: Coil

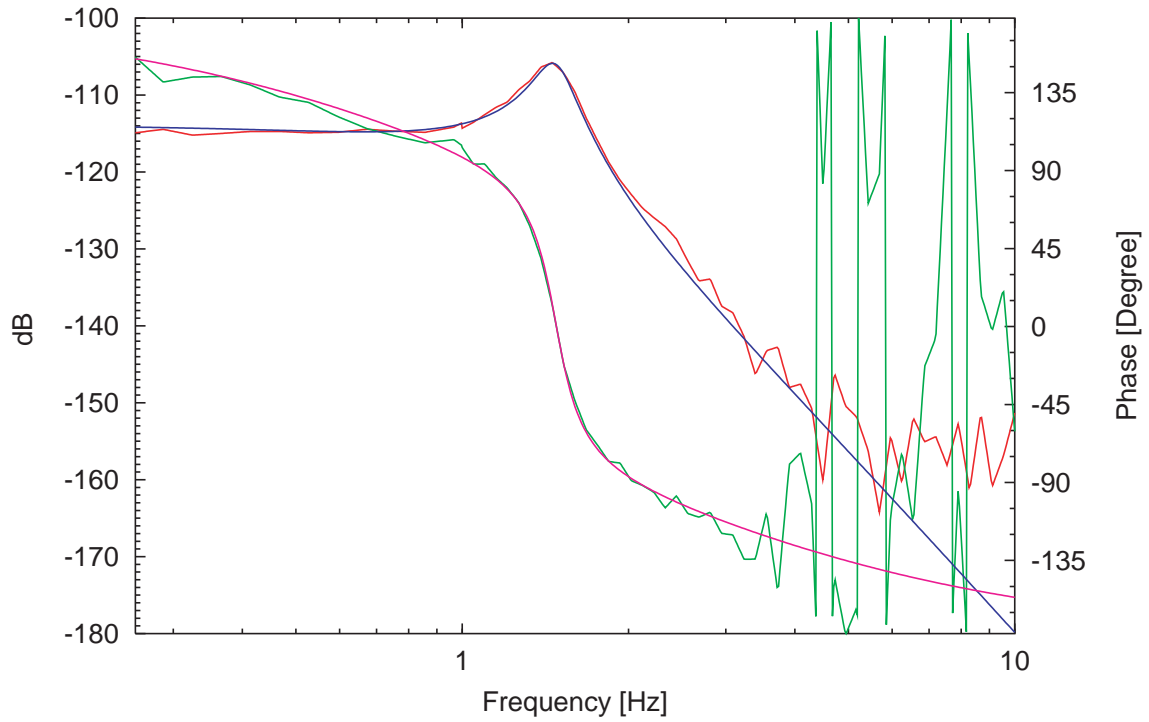
pole 915.81182m 414.08539m

pole 1.4682933 5.4986317

zero 1.1203811 439.8507m

factor 178.08691u

## NS Front Yaw PZT



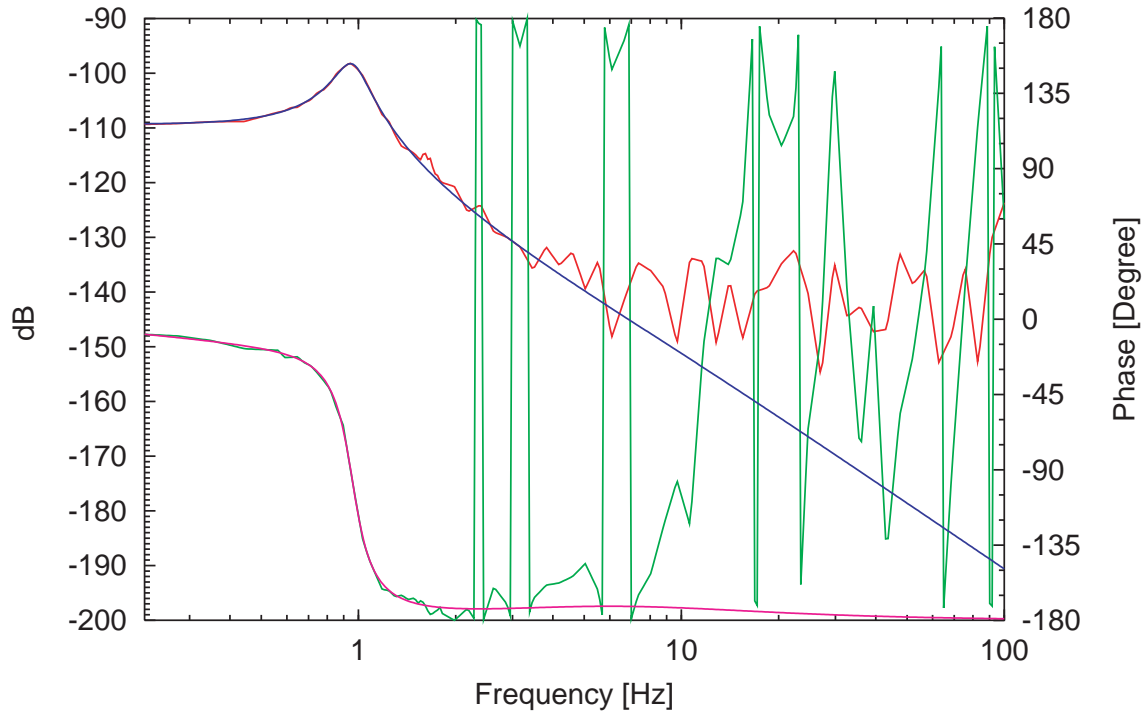
NSFY\_PZT\_01031.dat dB ——— TF dB ———  
NSFY\_PZT\_01031.dat Phase ——— TF Phase ———

Filename: NSFY\_PZT\_001031.eps  
Measured: 2000/10/31  
Actuator: PZT

pole 1.5451992 385.54752m  
pole 1.477209 6.1694858  
factor -2.0186892u



## NS End Length Coil



NSEX\_Coil\_000914.dat dB ———  
NSEX\_Coil\_000914.dat Phase ———  
TF dB ———  
TF Phase ———

Filename: NSEX\_Coil\_000914.eps

Measured: 2000/09/14

Actuator: Coil

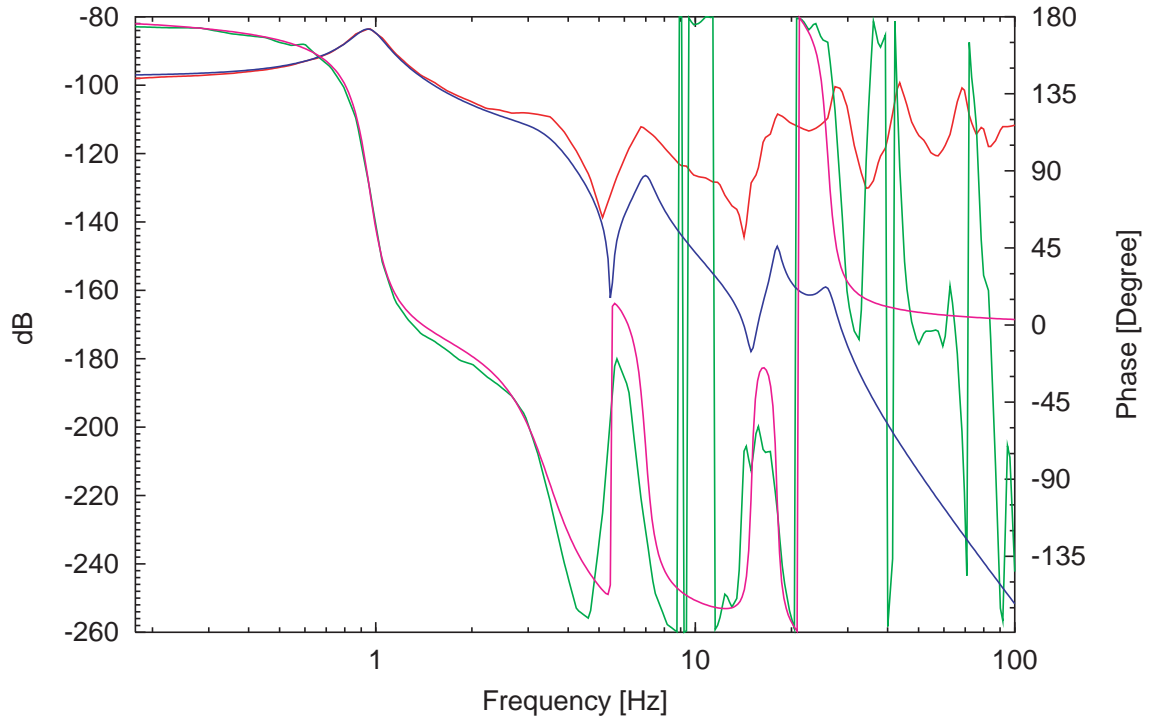
pole 957.31784m 4.5550114

pole 1.8723384 246.42779m

zero 1.9308107 321.94661m

factor 3.4232591u

## NS End Length PZT



NSEX<sub>p</sub>ZT<sub>0</sub>00914.dat dB ———  
 NSEX<sub>p</sub>ZT<sub>0</sub>00914.dat Phase ———

TF dB ———  
 TF Phase ———

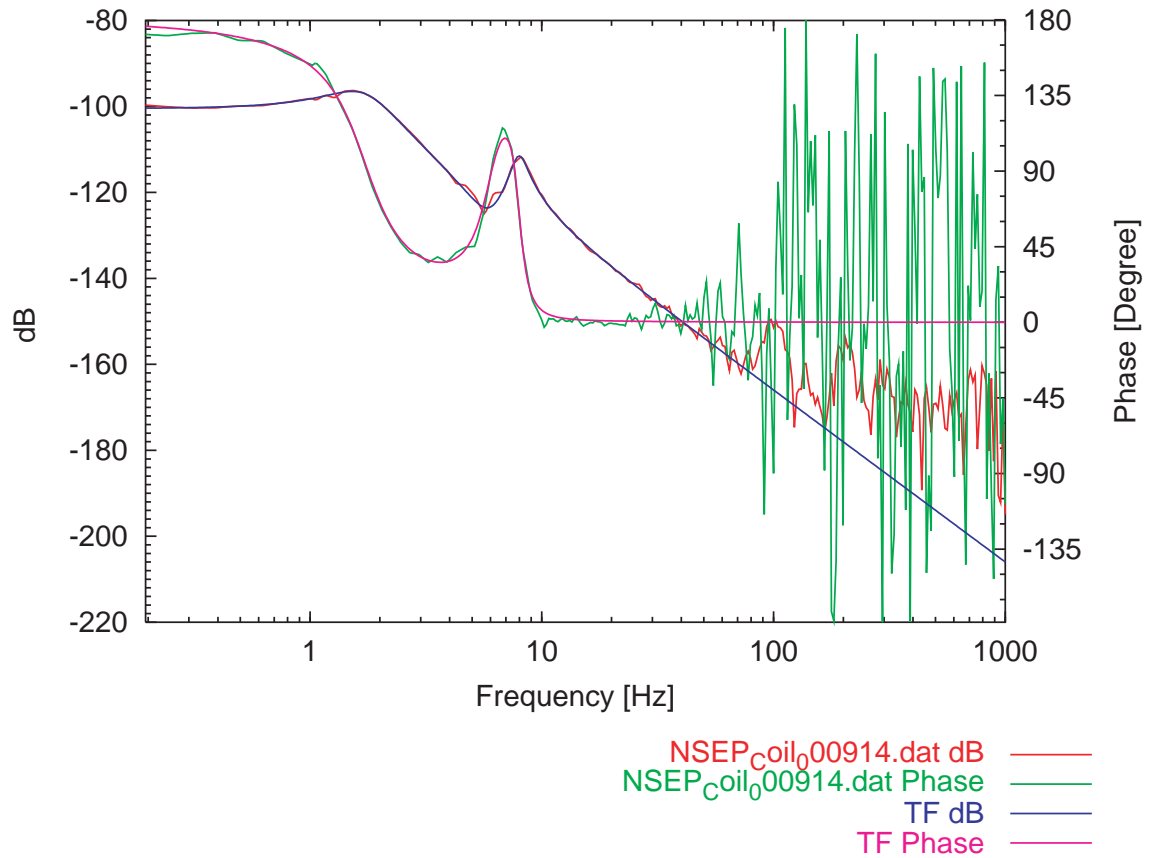
Filename: NSEX\_PZT\_000914.eps

Measured: 2000/09/14

Actuator: PZT

```
pole 954.08905m 4.5833969
pole 3.4824995 1.9625579
pole 6.9897816 9.2078216
pole 17.999206 20
pole 25.998251 10.247134
zero 5.4499167 497.04687
zero 15.005965 21.823885
factor -13.628682u
```

## NS End Pitch Coil



Filename: NSEP\_Coil\_000914.eps

Measured: 2000/09/14

Actuator: Coil

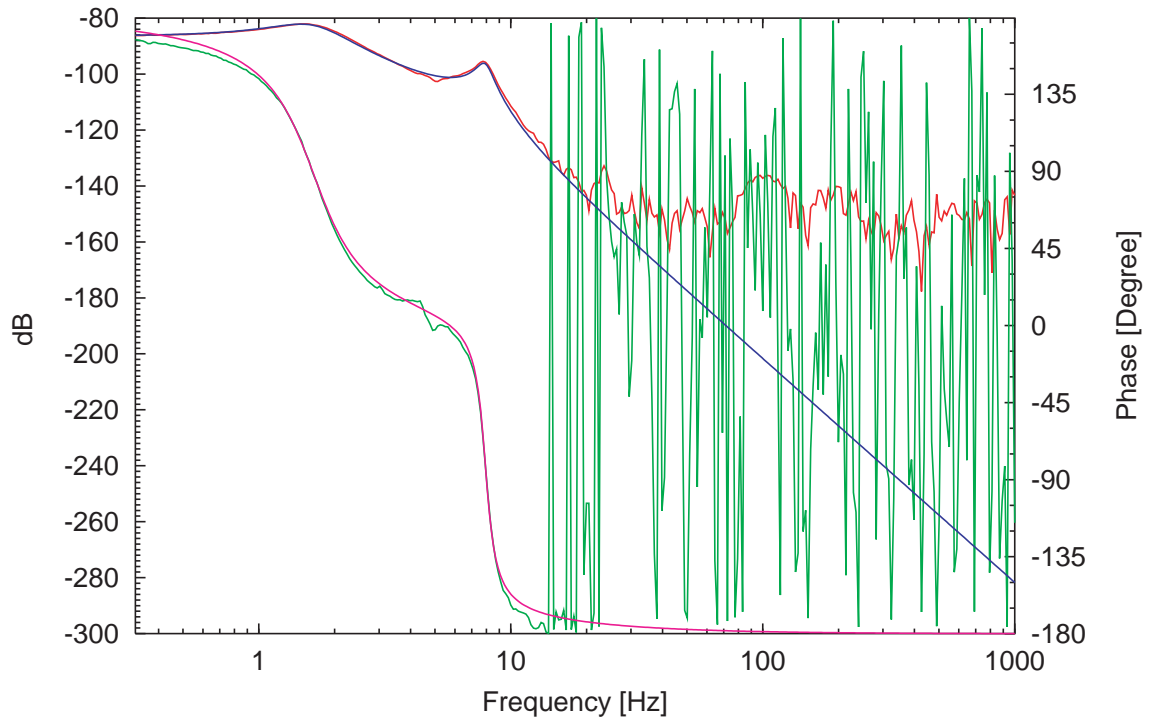
pole 1.7298546 1.5325428

pole 7.963057 6.3141808

zero 5.984944 2.7897179

factor -9.4707802u

## NS End Pitch PZT

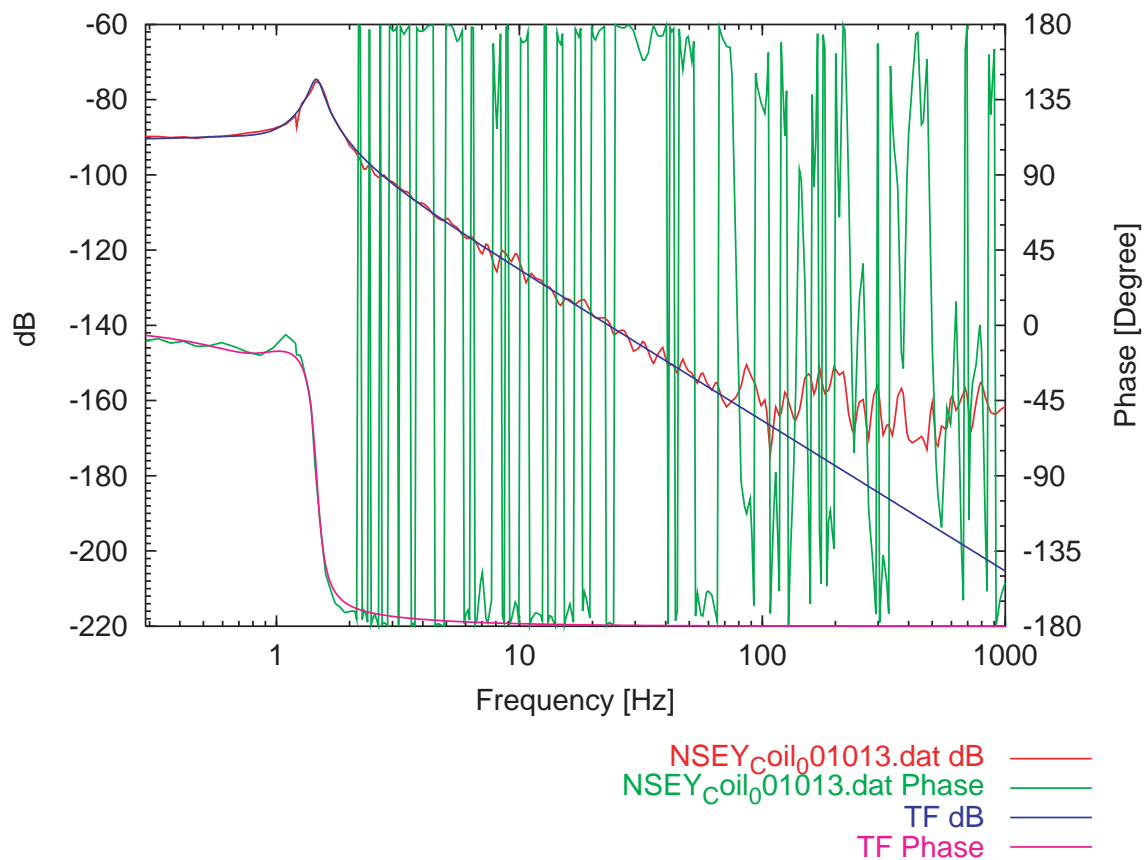


NSEP<sub>p</sub>ZT<sub>0</sub>00914.dat dB ——— TF dB ———  
NSEP<sub>p</sub>ZT<sub>0</sub>00914.dat Phase ——— TF Phase ———

Filename: NSEP\_PZT\_000914.eps  
Measured: 2000/09/14  
Actuator: PZT

pole 1.6511242 1.4794422  
pole 7.9263065 7.1297869  
factor -47.939148u

## NS End Yaw Coil



Filename: NSEY\_Coil\_001013.eps

Measured: 2000/10/13

Actuator: Coil

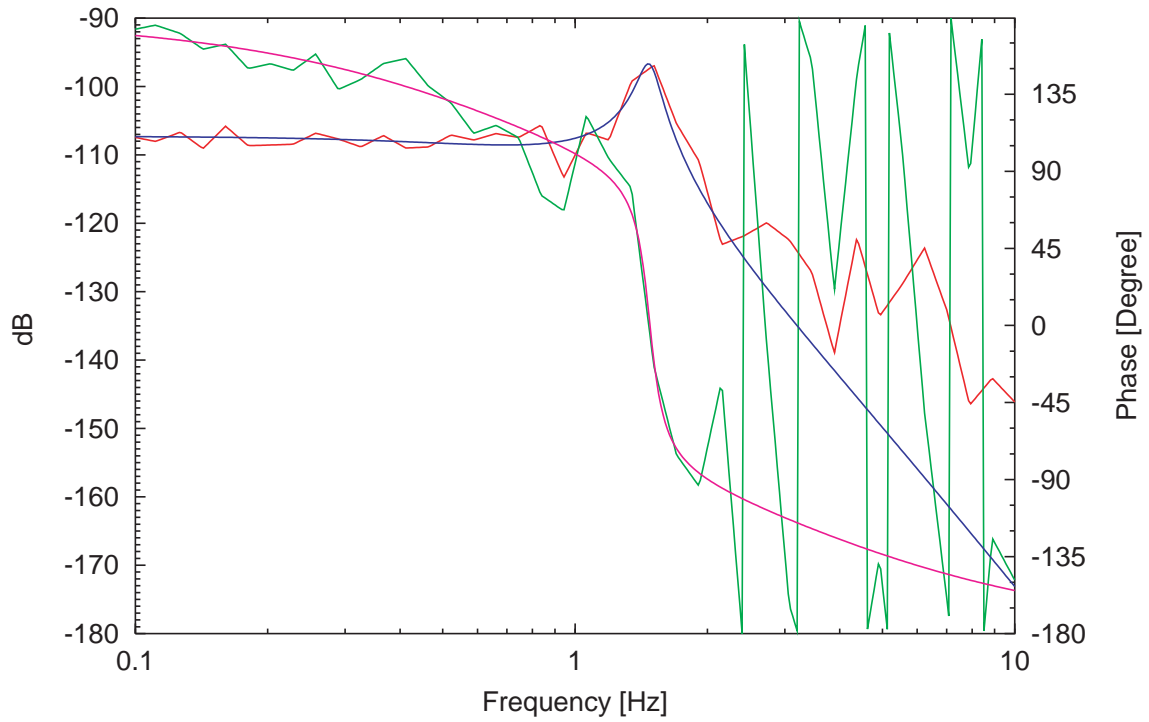
pole 864.46109m 1.0067575

pole 1.4616628 8.1807808

zero 930.75797m 1.2056586

factor 29.375552u

## NS End Yaw PZT



NSEY<sub>p</sub>ZT<sub>0</sub>01013.dat dB ——— TF dB ———  
NSEY<sub>p</sub>ZT<sub>0</sub>01013.dat Phase ——— TF Phase ———

Filename: NSEY\_PZT\_001013.eps  
 Measured: 2000/10/13  
 Actuator: PZT

pole 1.4773925 8.9488658  
 pole 1.5646358 355.78088m  
 factor -4.329794u