
TM Transfer Functions and Mode Shape Plots (T1000263-v1)

Horizontal axis on all plots is log10 of frequency in Hz

Vertical axis on all plots is log10 of transfer function from structure displacement (in m or rad) to optic displacement (in m or rad)

modelcase

20090819TM

modelcasecomment

20090819TM, based on 20080326TM (Norna's conceptual design from T060283-02 with improved damping parameters from Alastair Heptonstall) larger d2 per M080134-00, latest monolithic parameters.

Utility stuff

■ Transfer function tables (values less than 10^{-15} suppressed)

■ Structure displacement to optic displacement TFs at different frequencies

prettytftable[0.1]

	x out	y out	z out	yaw out	pitch out	roll out
x in	1.06973	0	0	0	-0.044431	0
y in	0	1.06164	0	0	0	0.0222554
z in	0	-1.1783×10^{-14}	1.03322	0	2.6895×10^{-15}	-3.18903×10^{-13}
yaw in	0	0	0	1.03737	0	0
pitch in	0.00206274	0	0	0	-0.0000856755	0
roll in	0	0.189875	-9.03813×10^{-15}	0	0	0.49184

prettytftable[0.3]

	x out	y out	z out	yaw out	pitch out	roll out
x in	2.15368	0	0	0	-1.10313	0
y in	0	1.92862	-4.38361×10^{-15}	0	0	0.371172
z in	0	0	1.3959	0	5.55395×10^{-15}	-1.48565×10^{-14}
yaw in	0	0	0	1.44214	0	0
pitch in	0.0041529	0	0	0	-0.00212713	0
roll in	0	0.346304	-1.37057×10^{-14}	0	0	0.623985

prettytftable[1]

	x out	y out	z out	yaw out	pitch out	roll out
x in	13.2975	0	0	0	-10.7401	4.00174×10^{-15}
y in	0	-4.58374	-1.92231×10^{-14}	0	1.83731×10^{-15}	-3.82706
z in	0	1.20145×10^{-14}	-0.681247	0	1.30822×10^{-15}	-2.16521×10^{-13}
yaw in	0	0	0	-1.68494	0	0
pitch in	0.0256412	0	0	0	-0.0207098	0
roll in	0	-0.620295	-8.16787×10^{-15}	0	1.07499×10^{-15}	-2.23917

prettytftable[3]

	x out	y out	z out	yaw out	pitch out	roll out
x in	-0.00936372	0	0	0	-0.0236626	0
y in	0	-0.0096458	0	0	0	-2.35524
z in	0	0	0.187109	0	0	-8.92595×10^{-14}
yaw in	0	0	0	-0.626942	0	0
pitch in	-0.0000180559	0	0	0	-0.000045628	0
roll in	0	-0.000423229	0	0	0	0.443101

prettytftable[10]

	x out	y out	z out	yaw out	pitch out	roll out
x in	1.05543×10^{-7}	0	0	0	2.5117×10^{-7}	0
y in	0	2.96829×10^{-7}	0	0	0	-0.000118292
z in	0	0	0.000138188	0	0	0
yaw in	0	0	0	4.17058×10^{-7}	0	0
pitch in	2.03517×10^{-10}	0	0	0	4.84327×10^{-10}	0
roll in	0	7.85849×10^{-8}	0	0	0	-0.000148179

prettytftable[30]

	x out	y out	z out	yaw out	pitch out	roll out
x in	1.37313×10^{-11}	0	0	0	3.22937×10^{-11}	0
y in	0	3.37339×10^{-11}	0	0	0	6.6744×10^{-9}
z in	0	0	3.62977×10^{-9}	0	0	0
yaw in	0	0	0	5.41806×10^{-11}	0	0
pitch in	2.64779×10^{-14}	0	0	0	6.22714×10^{-14}	0
roll in	0	8.50162×10^{-12}	0	0	0	1.332×10^{-8}

prettytftable[100]

	x out	y out	z out	yaw out	pitch out	roll out
x in	0	0	0	0	2.07996×10^{-15}	0
y in	0	2.14919×10^{-15}	0	0	0	3.31707×10^{-13}
z in	0	0	2.14082×10^{-13}	0	0	0
yaw in	0	0	0	3.49307×10^{-15}	0	0
pitch in	0	0	0	0	0	0
roll in	0	0	0	0	0	7.02523×10^{-13}

■ Top mass force TFs

prettytftable[0.01]

	x out	y out	z out	yaw out	pitch out	roll out
x in	0.00034902	0	0	0	-0.000045395	0
y in	0	0.000248942	0	0	0	-0.000135078
z in	0	0	0.00031187	0	0	0
yaw in	0	0	0	0.0151486	0	0
pitch in	-0.00116855	0	0	0	0.045255	0
roll in	0	0.000492447	0	0	0	0.00476906

prettytfftable[0.03]

	x out	y out	z out	yaw out	pitch out	roll out
x in	0.000350871	0	0	0	-0.000046707	0
y in	0	0.000250113	0	0	0	-0.000134829
z in	0	0	0.000312677	0	0	0
yaw in	0	0	0	0.0151927	0	0
pitch in	-0.00117648	0	0	0	0.0454369	0
roll in	0	0.000494823	0	0	0	0.00477586

prettytfftable[0.1]

	x out	y out	z out	yaw out	pitch out	roll out
x in	0.000373135	0	0	0	-0.0000630381	0
y in	0	0.000264111	0	0	0	-0.000131715
z in	0	0	0.000322127	0	0	0
yaw in	0	0	0	0.0157091	0	0
pitch in	-0.00127284	0	0	0	0.0475928	0
roll in	0	0.000523237	0	0	0	0.00485478

prettytfftable[0.3]

	x out	y out	z out	yaw out	pitch out	roll out
x in	0.000751792	0	0	0	-0.000460904	0
y in	0	0.000479408	0	0	0	-0.0000645334
z in	0	0	0.000435199	0	0	0
yaw in	0	0	0	0.0218385	0	0
pitch in	-0.00312399	0	0	0	0.0774323	0
roll in	0	0.000964134	0	0	0	0.00571919

prettytfftable[1]

	x out	y out	z out	yaw out	pitch out	roll out
x in	0.00463517	0	0	0	-0.0036513	0
y in	0	-0.00119645	0	0	0	-0.000514692
z in	0	0	-0.000212392	0	0	0
yaw in	0	0	0	-0.0255152	0	0
pitch in	-0.0126776	0	0	0	-0.0821848	0
roll in	0	-0.000278267	0	0	0	-0.0173223

prettytfftable[3]

	x out	y out	z out	yaw out	pitch out	roll out
x in	-3.24636×10^{-6}	0	0	0	-0.0000110508	0
y in	0	-2.76592×10^{-6}	0	0	0	-0.000829095
z in	0	0	0.000058335	0	0	0
yaw in	0	0	0	-0.00949387	0	0
pitch in	-8.67439×10^{-6}	0	0	0	0.00282521	0
roll in	0	8.17245×10^{-6}	0	0	0	0.00742096

```
prettytfftable[10]
```

	x out	y out	z out	yaw out	pitch out	roll out
x in	3.67106×10^{-11}	0	0	0	8.28496×10^{-11}	0
y in	0	6.66707×10^{-11}	0	0	0	6.30752×10^{-9}
z in	0	0	4.30828×10^{-8}	0	0	0
yaw in	0	0	0	6.31558×10^{-9}	0	0
pitch in	-2.14211×10^{-11}	0	0	0	4.46273×10^{-9}	0
roll in	0	3.99446×10^{-10}	0	0	0	-1.31947×10^{-6}

```
prettytfftable[30]
```

	x out	y out	z out	yaw out	pitch out	roll out
x in	4.77626×10^{-15}	0	0	0	1.06223×10^{-14}	0
y in	0	7.69777×10^{-15}	0	0	0	-1.75111×10^{-12}
z in	0	0	1.13165×10^{-12}	0	0	0
yaw in	0	0	0	8.20465×10^{-13}	0	0
pitch in	-2.94738×10^{-15}	0	0	0	6.03664×10^{-13}	0
roll in	0	4.1133×10^{-14}	0	0	0	1.23688×10^{-10}

```
prettytfftable[100]
```

	x out	y out	z out	yaw out	pitch out	roll out
x in	0	0	0	0	0	0
y in	0	0	0	0	0	0
z in	0	0	0	0	0	0
yaw in	0	0	0	0	0	0
pitch in	0	0	0	0	0	0
roll in	0	0	0	0	0	6.54961×10^{-15}

■ Mode shape listings/plots

```
#1
```

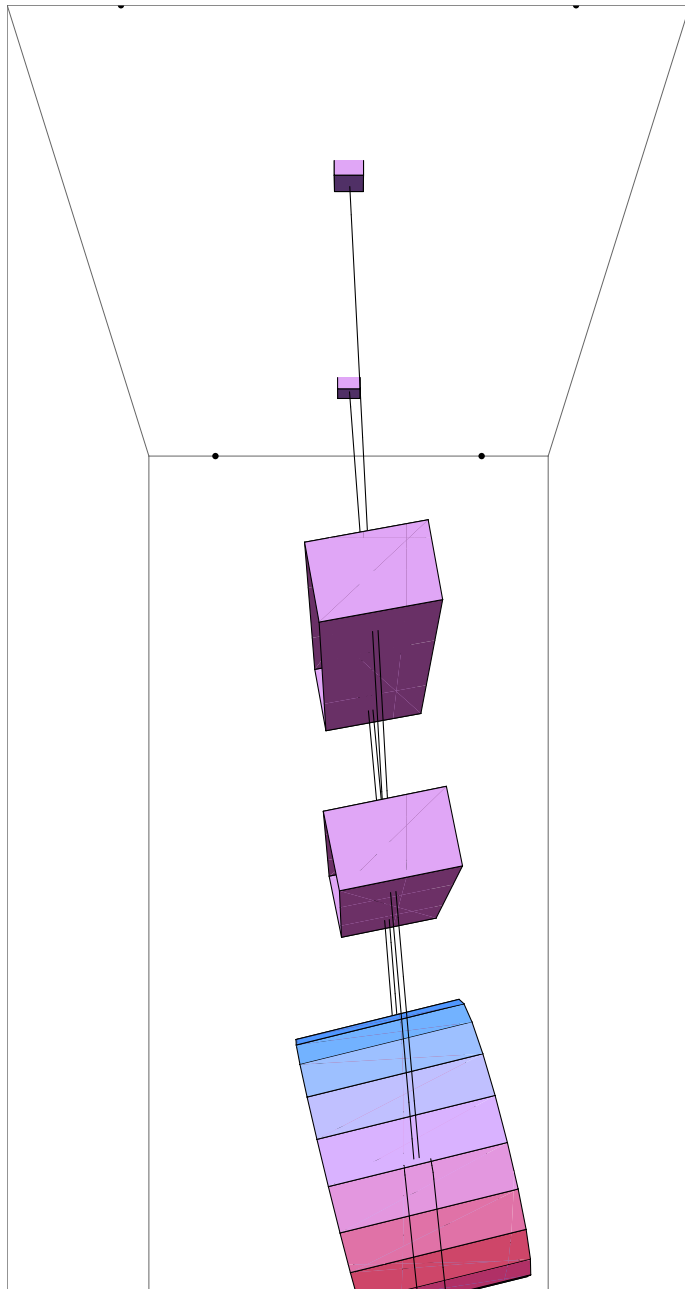
```
Hz2[[-1]]
```

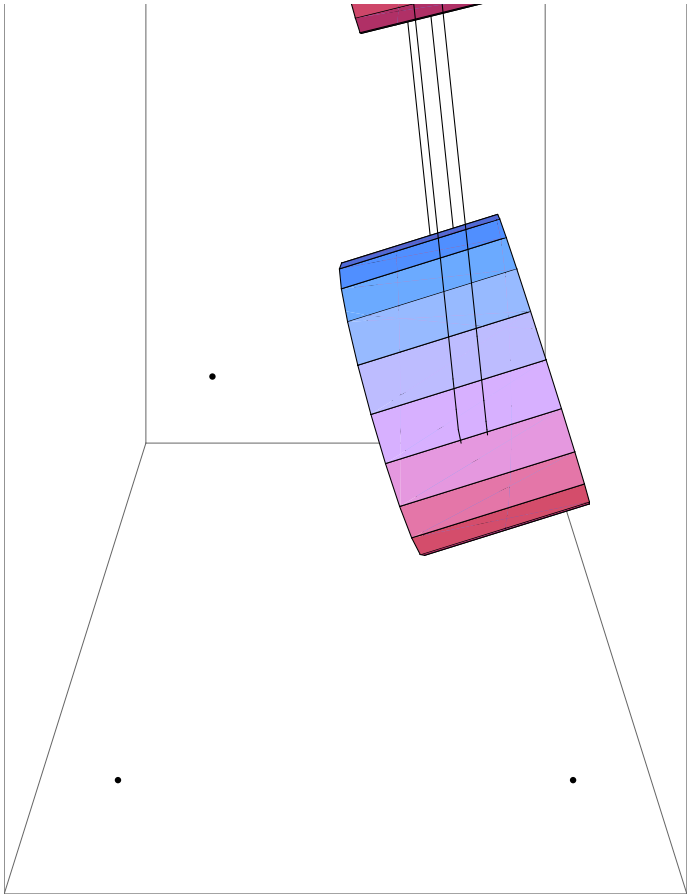
```
0.433341
```

```
pretty[Chop[e2ni.eigenvectors2[[-1]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	0.051938	0	0	0	-0.359755	0
Mass U	0.091846	0	0	0	-0.400323	0
Mass 2	0.150448	0	0	0	-0.483307	0
optic	0.277561	0	0	0	-0.604916	0

```
DoWithStatus["Plotting stage 2 mode 1",
  eigenplot[eigenvectors2[[-1]], 0.5, {0, -1, 0}, floatmatrix2]]
```

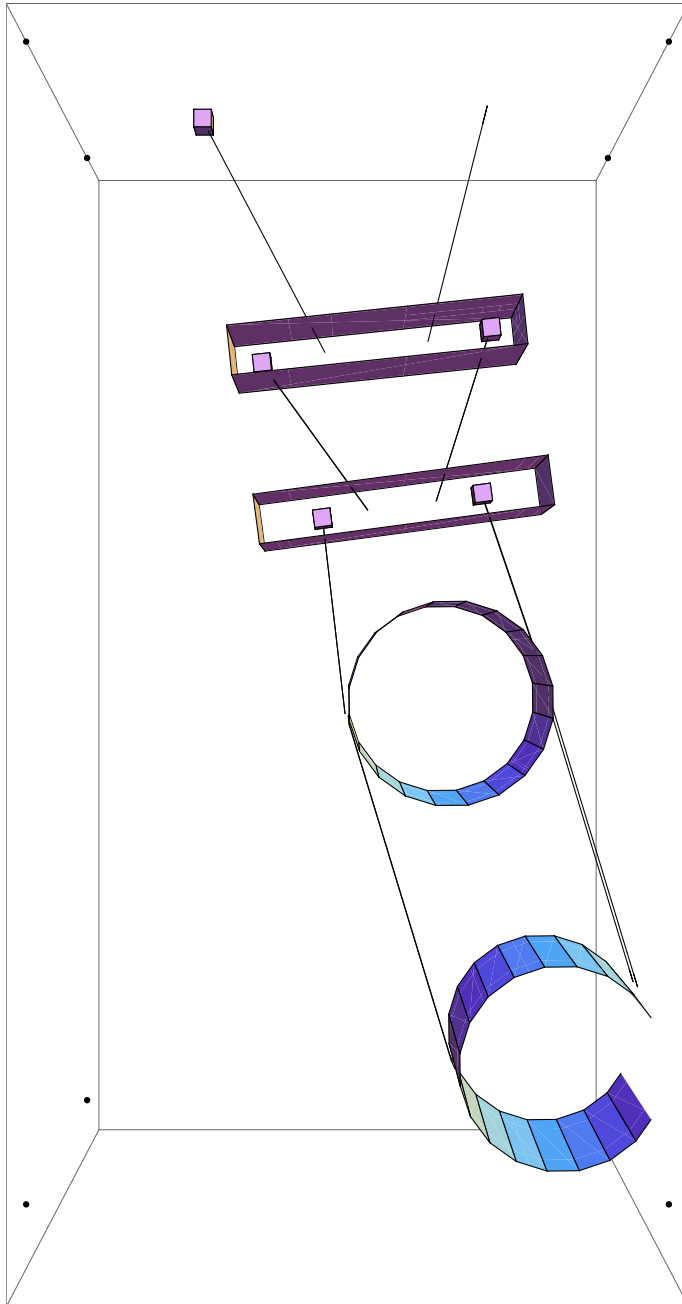




#2

```
Hz2[[-2]]  
  
0.462476  
  
pretty[Chop[e2ni.eigenvectors2[[-2]], 10^-4]]  
  
      x y      z yaw pitch roll  
Mass N 0 -0.0997679 0 0 0 -0.208256  
Mass U 0 -0.188933 0 0 0 -0.263761  
Mass 2 0 -0.341112 0 0 0 -0.335585  
optic 0 -0.706521 0 0 0 -0.336547
```

```
DoWithStatus["Plotting stage 2 mode 2",
  eigenplot[eigenvectors2[[-2]], 0.5, {-1, 0, 0}, floatmatrix2]]
```



#3

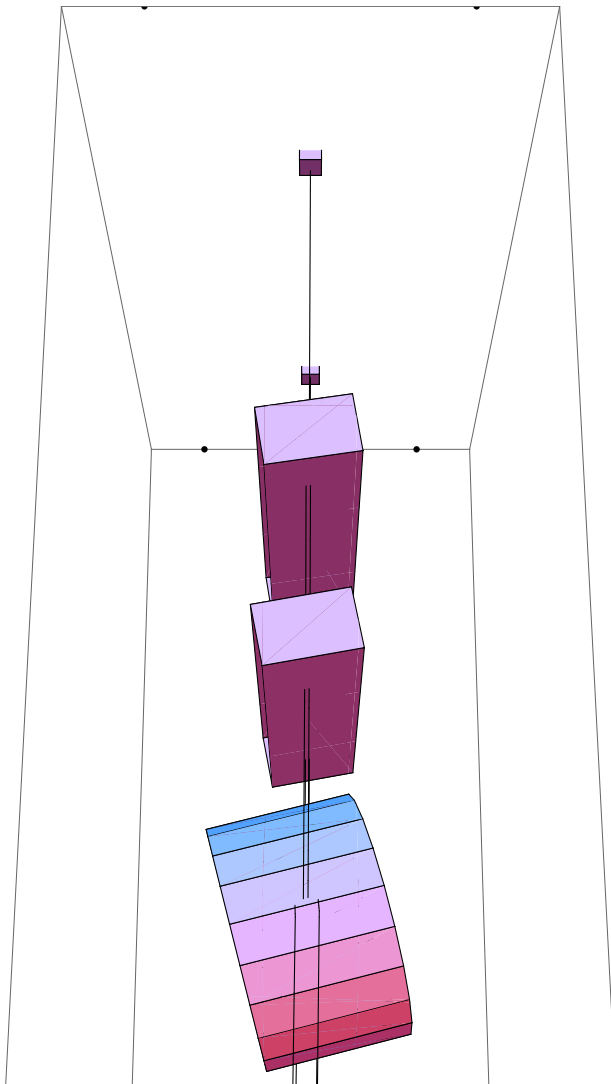
H_z2[[-3]]

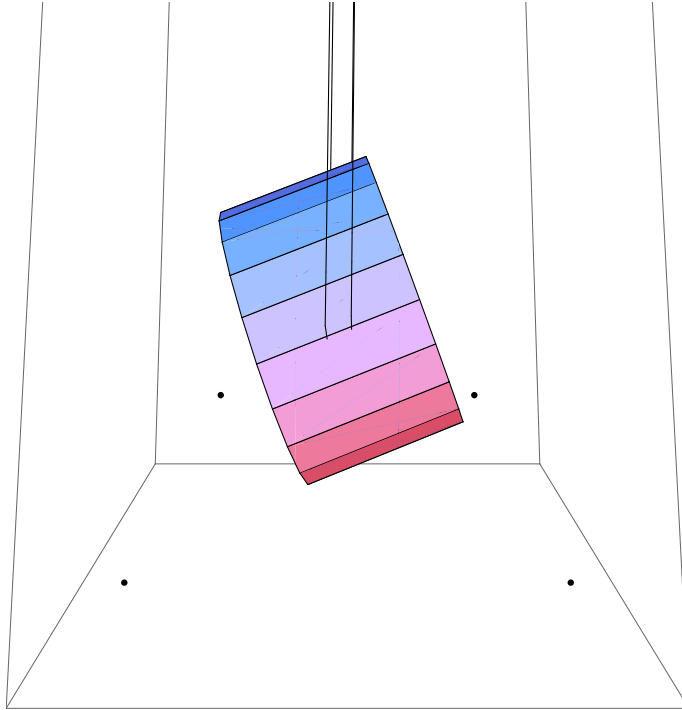
0.524882

```
pretty[Chop[e2ni.eigenvectors2[[-3]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	-0.00517727	0	0	0	-0.310599	0
Mass U	-0.00856471	0	0	0	-0.372414	0
Mass 2	-0.00849177	0	0	0	-0.504982	0
optic	-0.0207495	0	0	0	-0.713601	0

```
DoWithStatus["Plotting stage 2 mode 3",
eigenplot[eigenvectors2[[-3]], .5, {0, -1, -.25}, floatmatrix2]]
```





#4

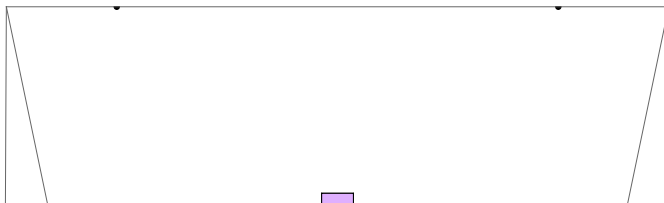
Hz2[[-4]]

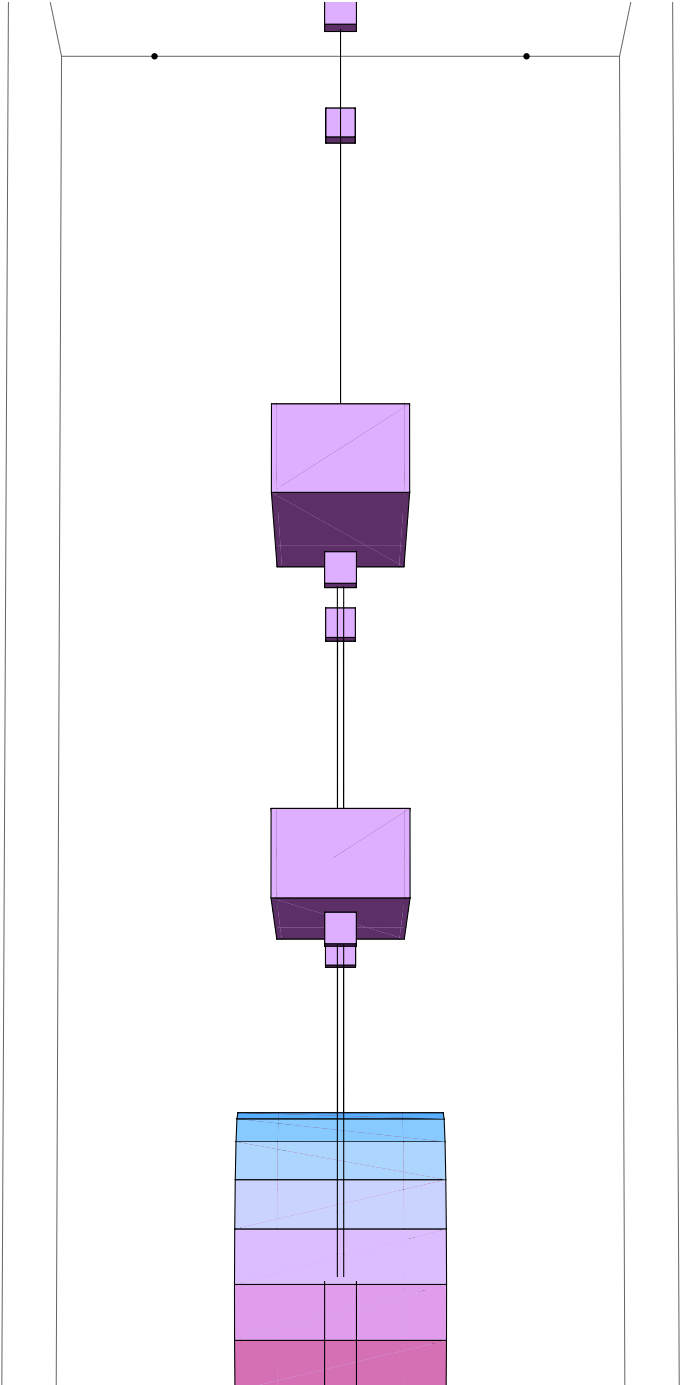
0.581511

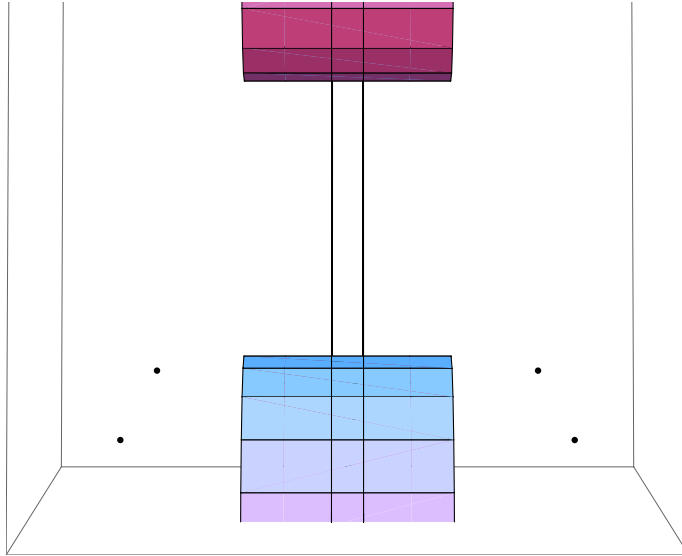
pretty[Chop[e2ni.eigenvectors2[[-4]], 10^-4]]

	x	y	z	yaw	pitch	roll
Mass N	0	0	-0.261409	0	0	0
Mass U	0	0	-0.472455	0	0	0
Mass 2	0	0	-0.59261	0	0	0
optic	0	0	-0.597716	0	0	0

DoWithStatus["Plotting stage 2 mode 4",
eigenplot[eigenvectors2[[-4]], .5, {0, -3, -.25}, floatmatrix2]]







#5

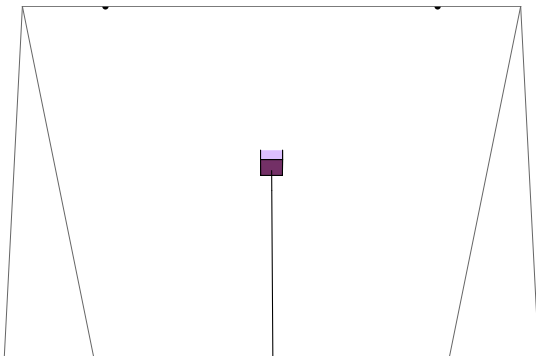
H2[[-5]]

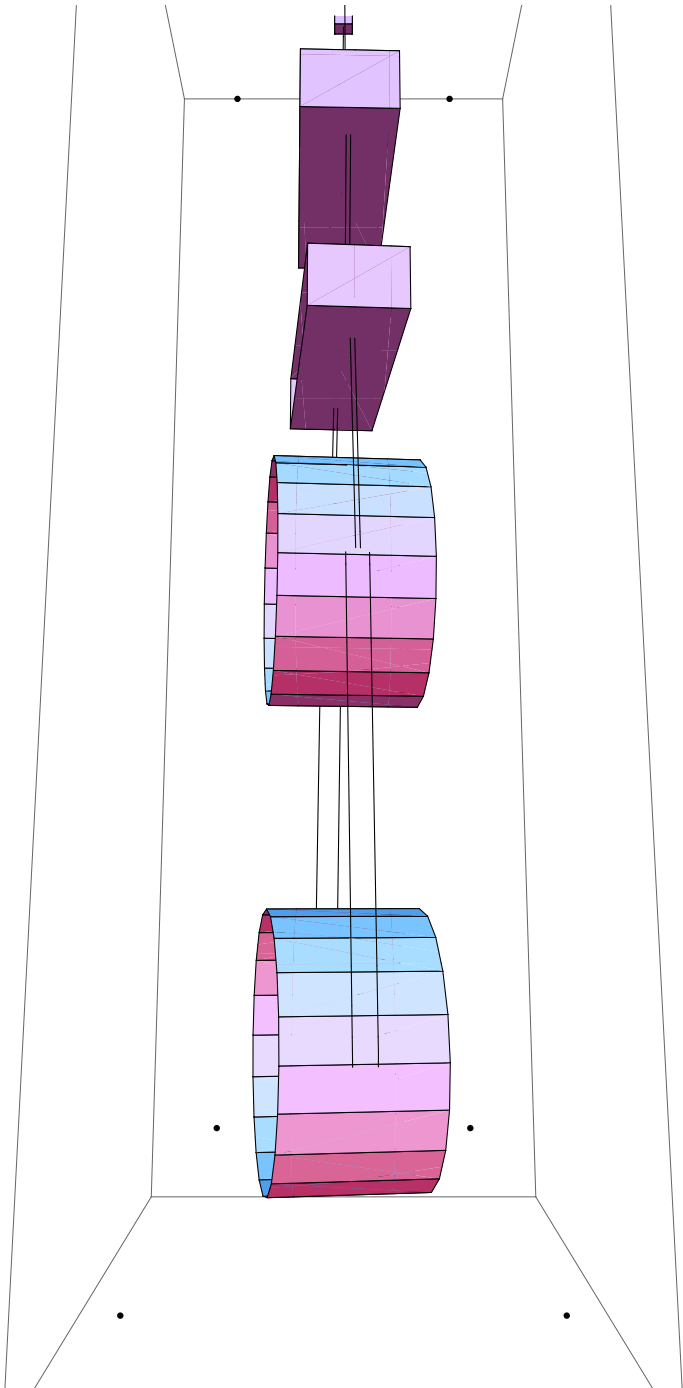
0.598138

pretty[Chop[e2ni.eigenvectors2[[-5]], 10^-4]]

	x	y	z	yaw	pitch	roll
Mass N	0	0	0	-0.170582	0	0
Mass U	0	0	0	-0.391304	0	0
Mass 2	0	0	0	-0.517158	0	0
optic	0	0	0	-0.741843	0	0

DoWithStatus["Plotting stage 2 mode 5",
eigenplot[eigenvectors2[[-5]], -0.2, {0, -1, -0.25}, floatmatrix2]]





#6

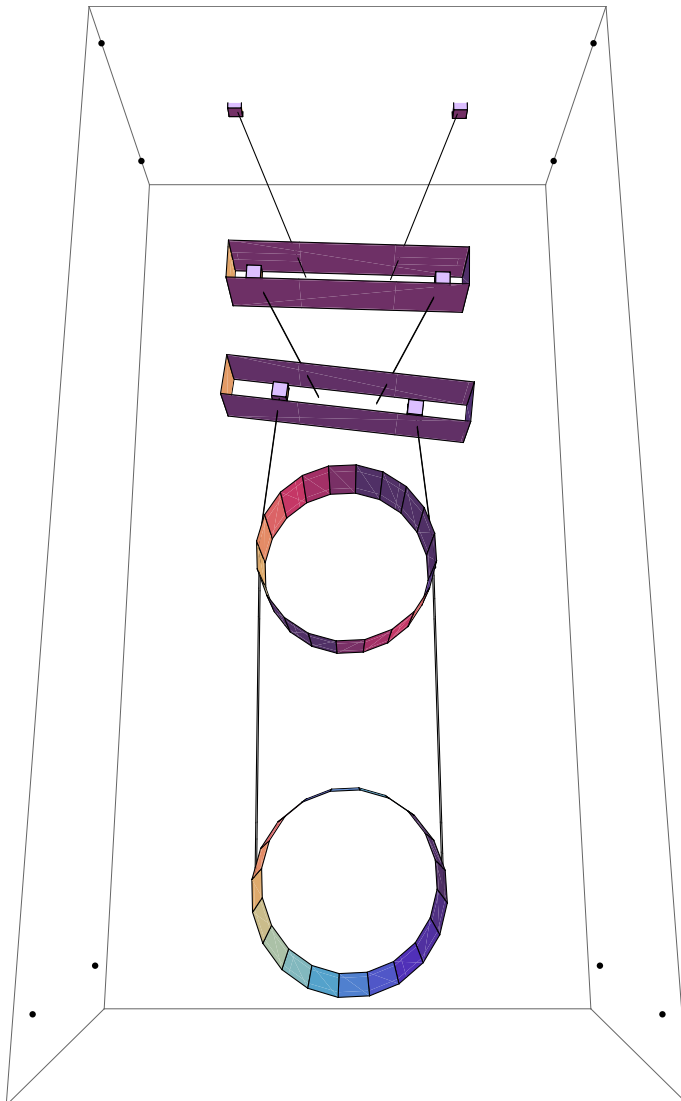
Hz2[[-6]]

0.863443

pretty[Chop[e2ni.eigenvectors2[[-6]], 10^-4]]

	x	y	z	yaw	pitch	roll
Mass N	0	0.00733209	0	0	0	-0.157169
Mass U	0	0.00144487	0	0	0	-0.592319
Mass 2	0	-0.0110359	0	0	0	-0.556081
optic	0	0.0155793	0	0	0	-0.56108

DoWithStatus["Plotting stage 2 mode 6",
eigenplot[eigenvectors2[[-6]], -.2, {-1, 0, -.25}, floatmatrix2]]



#7

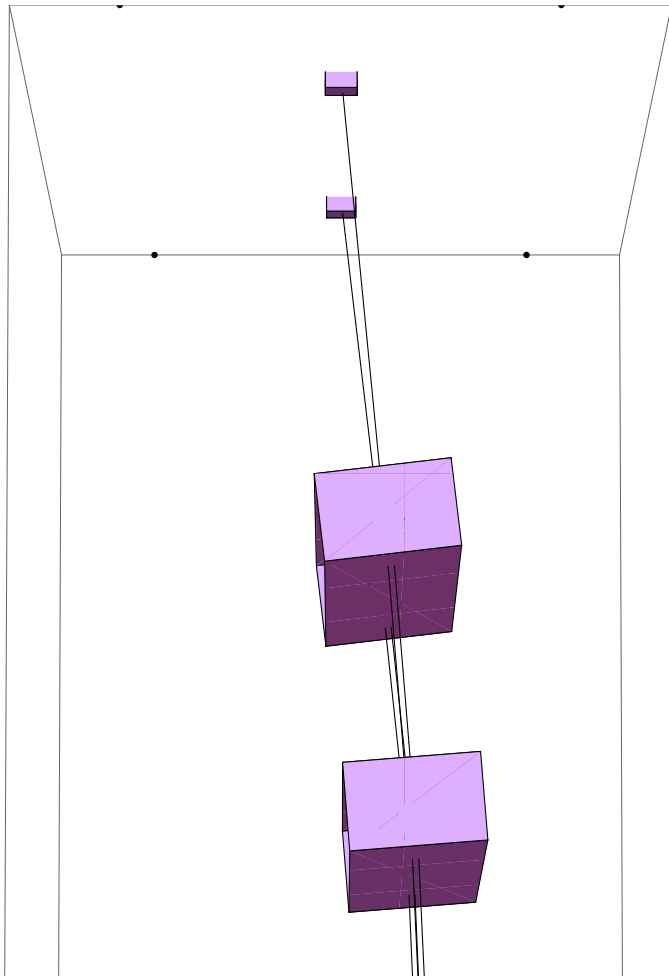
```
Hz2[[-7]]
```

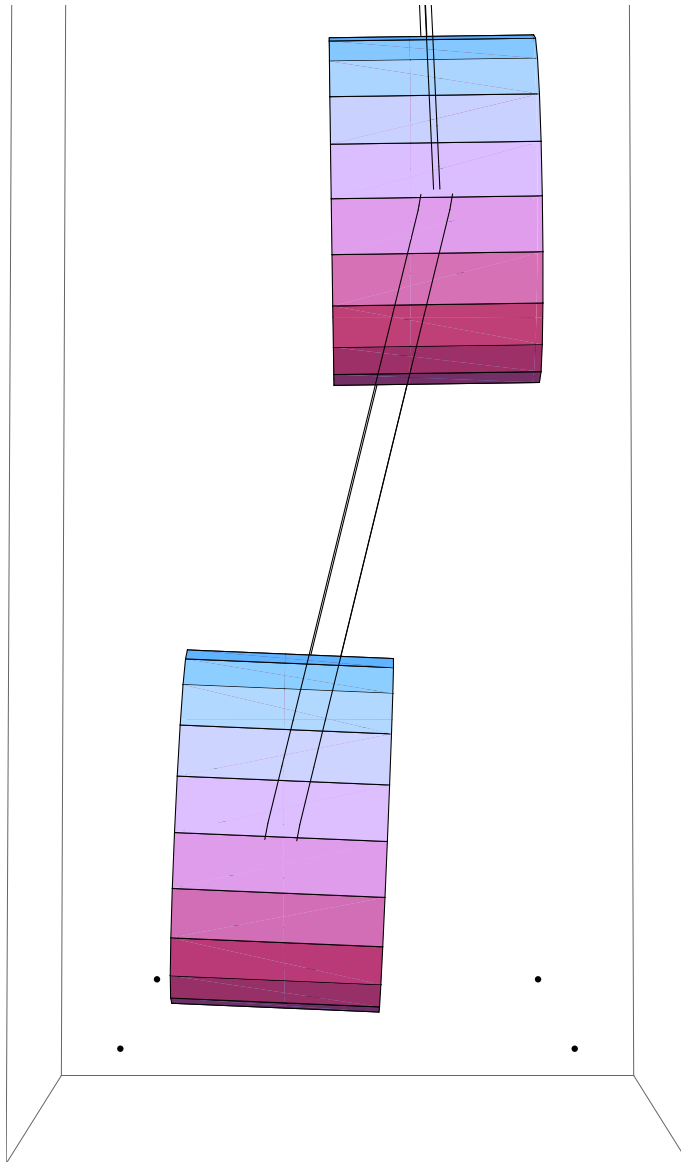
```
0.987195
```

```
pretty[Chop[e2ni.eigenvectors2[[-7]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	-0.223222	0	0	0	0.586207	0
Mass U	-0.350323	0	0	0	0.39868	0
Mass 2	-0.422563	0	0	0	0.0696439	0
optic	0.312621	0	0	0	-0.209095	0

```
DoWithStatus["Plotting stage 2 mode 7",
eigenplot[eigenvectors2[[-7]], -0.2, {0, -3, -0.25}, floatmatrix2]]
```





#8

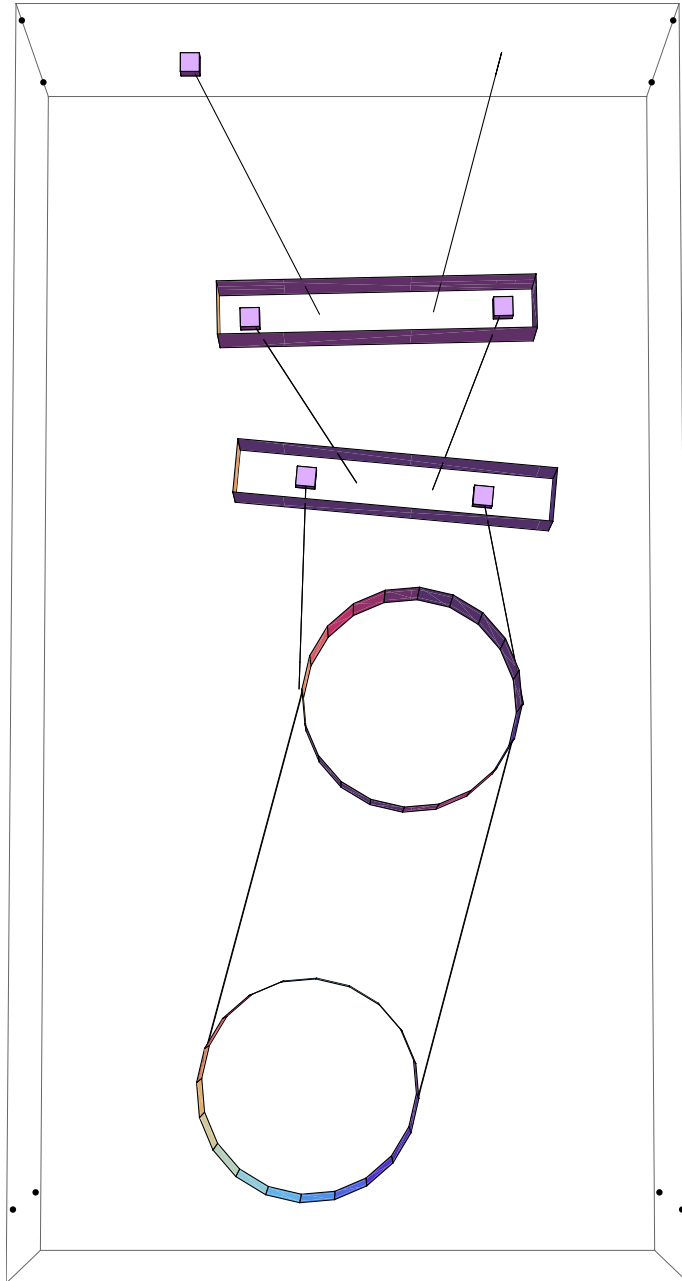
Hz2[[-8]]

1.04438

pretty[Chop[e2ni.eigenvectors2[[-8]], 10^-4]]

	x	y	z	yaw	pitch	roll
Mass N	0	0.228603	0	0	0	0.110062
Mass U	0	0.371292	0	0	0	-0.458922
Mass 2	0	0.496549	0	0	0	-0.349811
optic	0	-0.303829	0	0	0	-0.354851

```
DoWithStatus["Plotting stage 2 mode 8",
eigenplot[eigenvectors2[[-8]], -.2, {-3, 0, -.25}, floatmatrix2]]
```



#9

```
H22[[-9]]
```

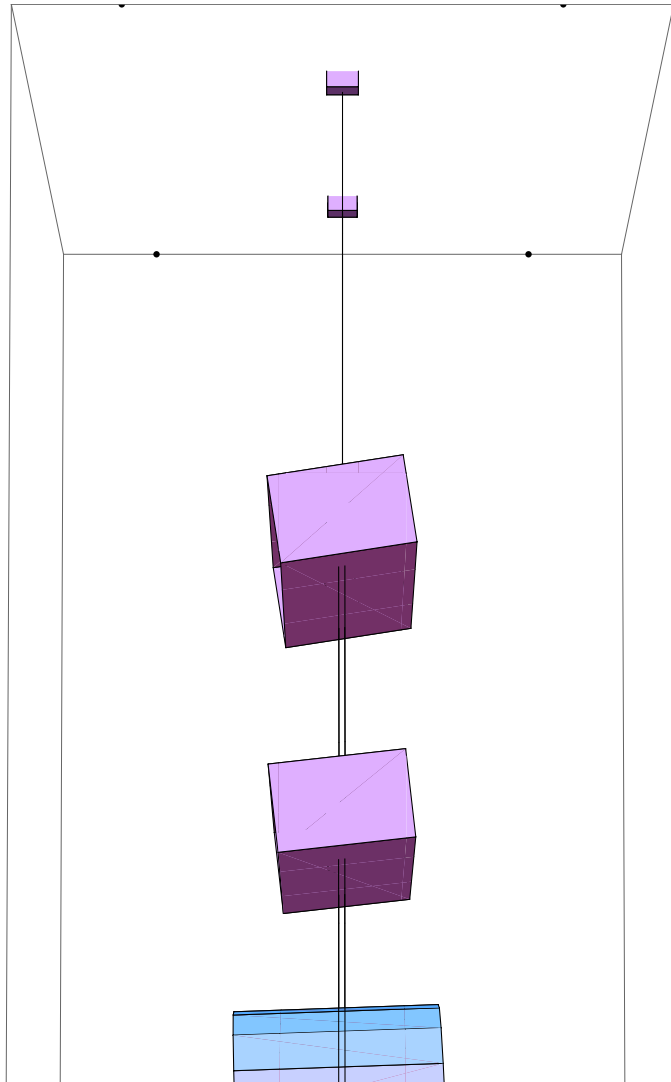
```
1.23394
```

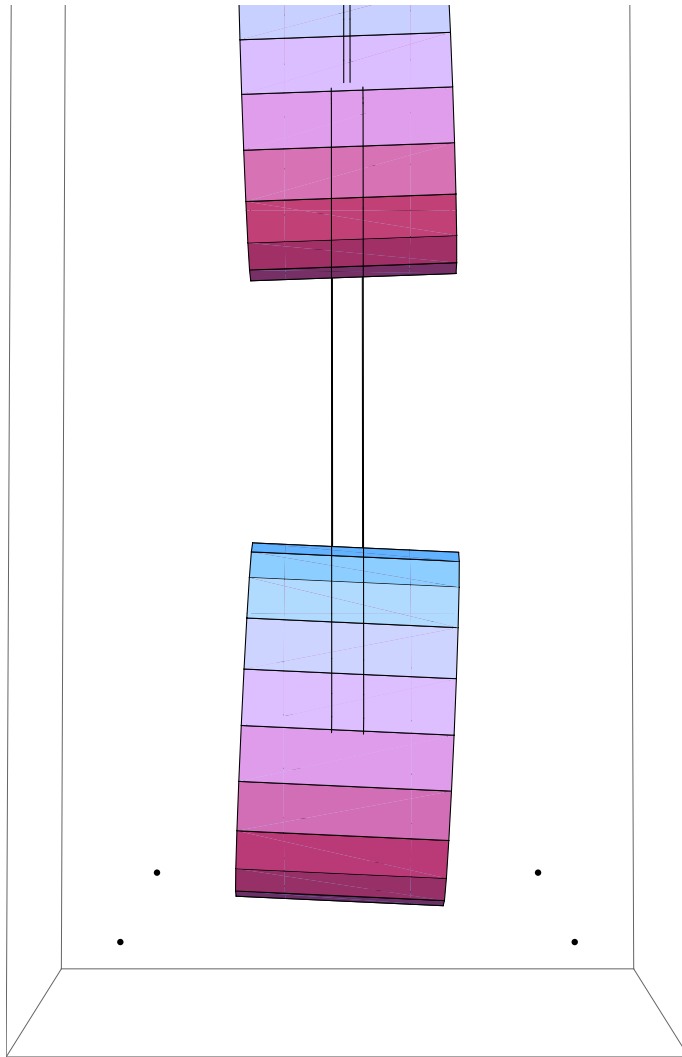


```
pretty[Chop[e2ni.eigenvectors2[[-9]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	0.00257512	0	0	0	0.775188	0
Mass U	0.00297775	0	0	0	0.562155	0
Mass 2	0.00168626	0	0	0	0.177274	0
optic	-0.000654283	0	0	0	-0.227201	0

```
DoWithStatus["Plotting stage 2 mode 9",
  eigenplot[eigenvectors2[[-9]], -0.2, {0, -3, -0.25}, floatmatrix2]]
```





#10

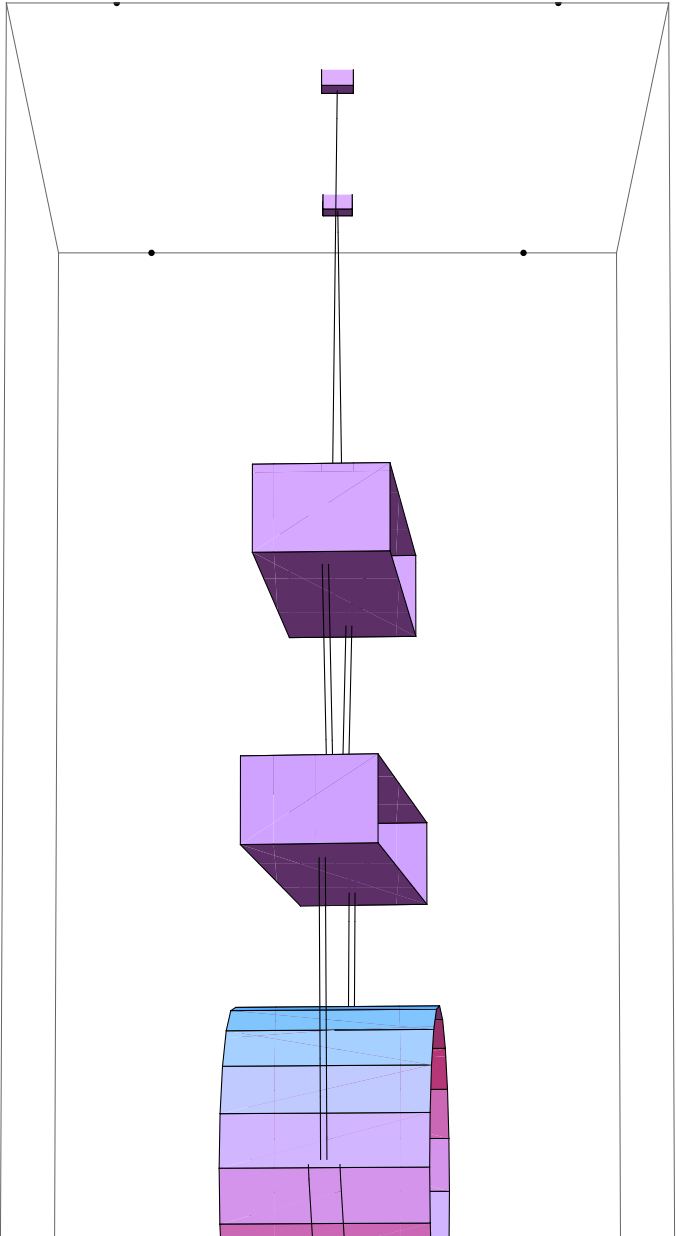
Hz2[[-10]]

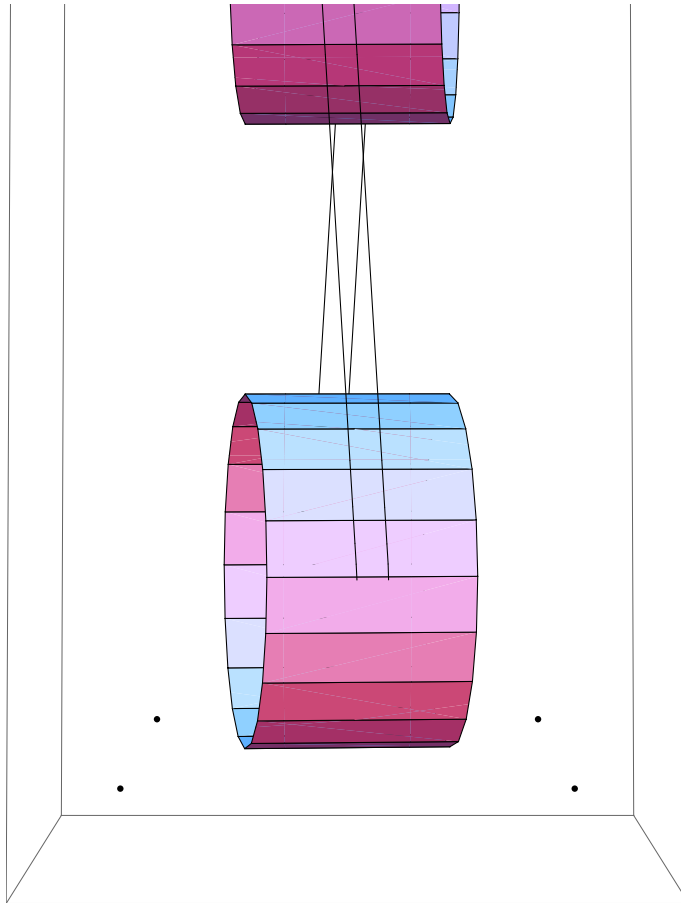
1.34564

pretty[Chop[e2ni.eigenvectors2[[-10]], 10^-4]]

	x	y	z	yaw	pitch	roll
Mass N	0	0	0	0.309145	0	0
Mass U	0	0	0	0.534147	0	0
Mass 2	0	0	0	0.370048	0	0
optic	0	0	0	-0.694392	0	0

DoWithStatus["Plotting stage 2 mode 10",
eigenplot[eigenvectors2[[-10]], -.2, {0, -3, -.25}, floatmatrix2]]





#11

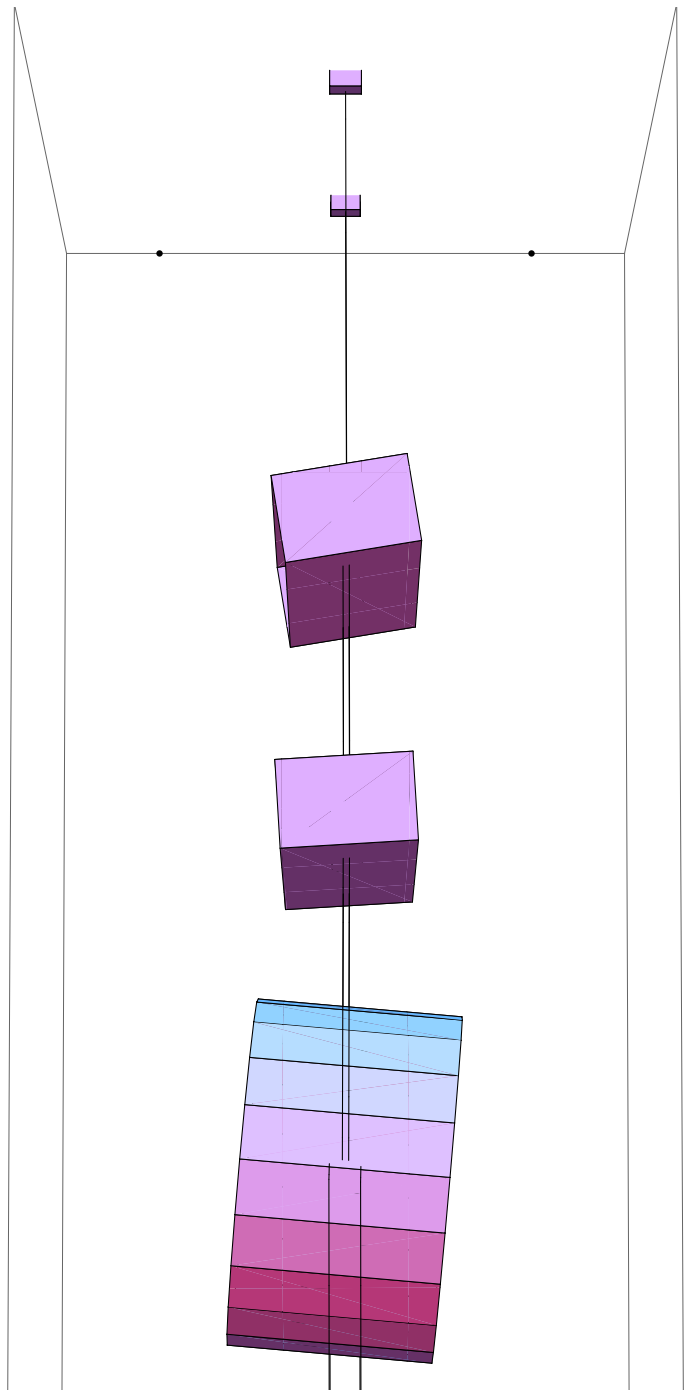
Hz2[[-11]]

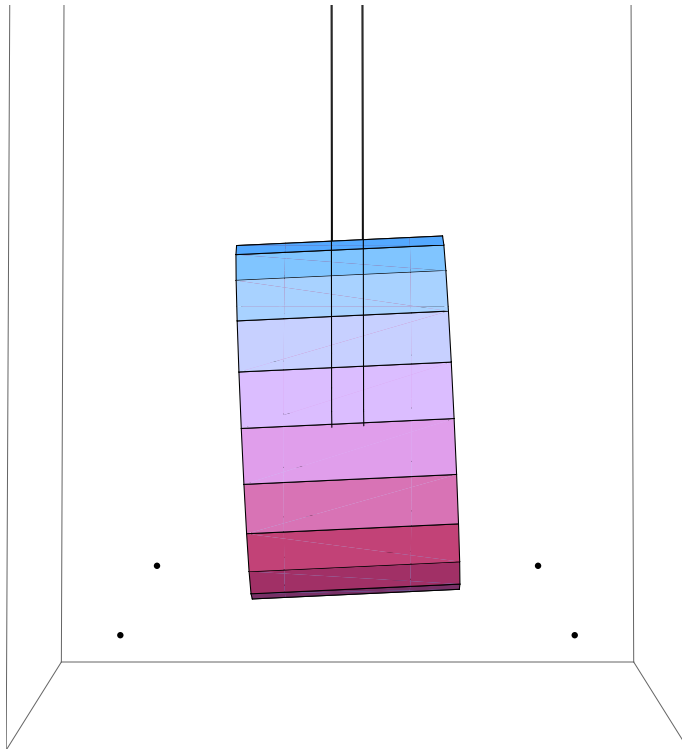
1.56866

pretty[Chop[e2ni.eigenvectors2[[-11]], 10^-4]]

	x	y	z	yaw	pitch	roll
Mass N	-0.00376106	0	0	0	0.813584	0
Mass U	-0.00498944	0	0	0	0.30289	0
Mass 2	0.00325816	0	0	0	-0.439202	0
optic	-0.000713082	0	0	0	0.231065	0

DoWithStatus["Plotting stage 2 mode 11",
eigenplot[eigenvectors2[[-11]], -.2, {0, -3, -.25}, floatmatrix2]]





#12

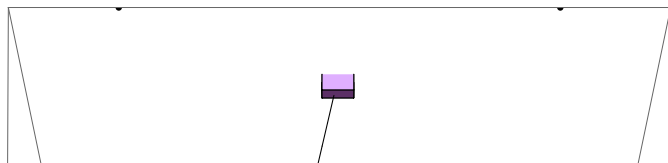
Hz2[[-12]]

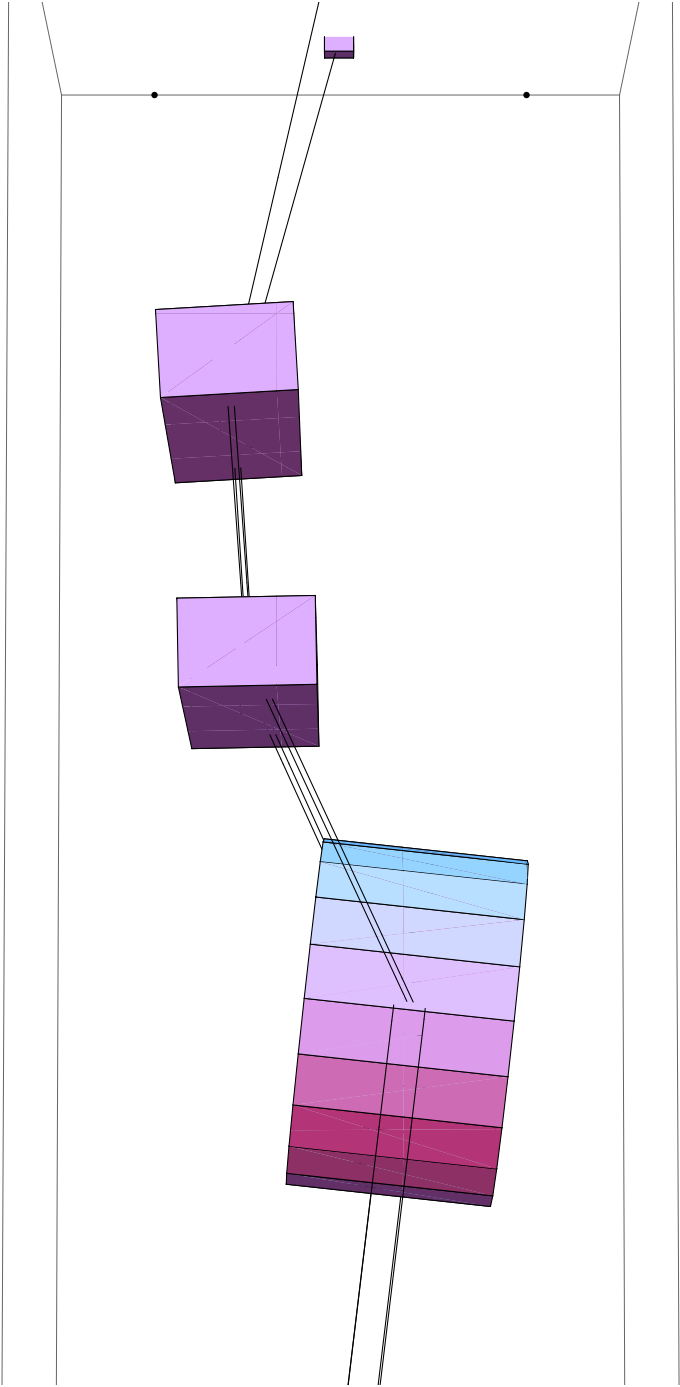
2.00727

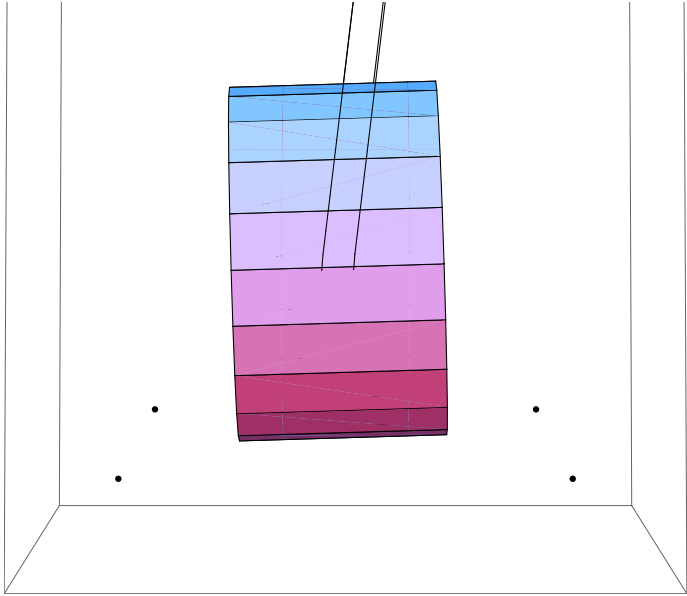
pretty[Chop[e2ni.eigenvectors2[[-12]], 10^-4]]

	x	y	z	yaw	pitch	roll
Mass N	0.535713	0	0	0	0.29273	0
Mass U	0.43956	0	0	0	0.0974149	0
Mass 2	-0.324967	0	0	0	-0.543335	0
optic	0.0372088	0	0	0	0.149725	0

DoWithStatus["Plotting stage 2 mode 12",
eigenplot[eigenvectors2[[-12]], -.2, {0, -3, -.25}, floatmatrix2]]





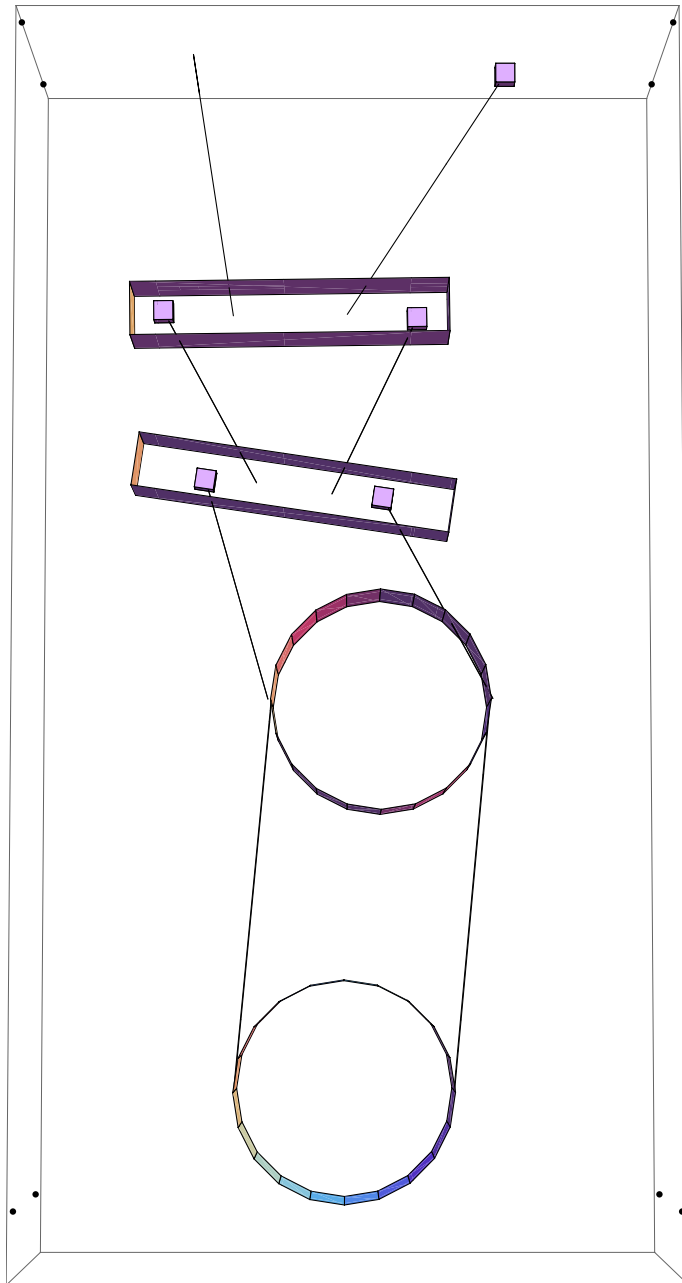


#13

```
H22[[-13]]  
  
2.124  
  
pretty[Chop[e2ni.eigenvectors2[[-13]], 10^-4]]  
  
      x y      z yaw pitch roll  
Mass N 0 -0.45195 0 0 0 0.0639173  
Mass U 0 -0.417972 0 0 0 -0.741402  
Mass 2 0 0.257417 0 0 0 0.0126661  
optic 0 -0.0260479 0 0 0 0.0132742
```



```
DoWithStatus["Plotting stage 2 mode 13",
eigenplot[eigenvectors2[[-13]], -.2, {-3, 0, -.25}, floatmatrix2]]
```



#14

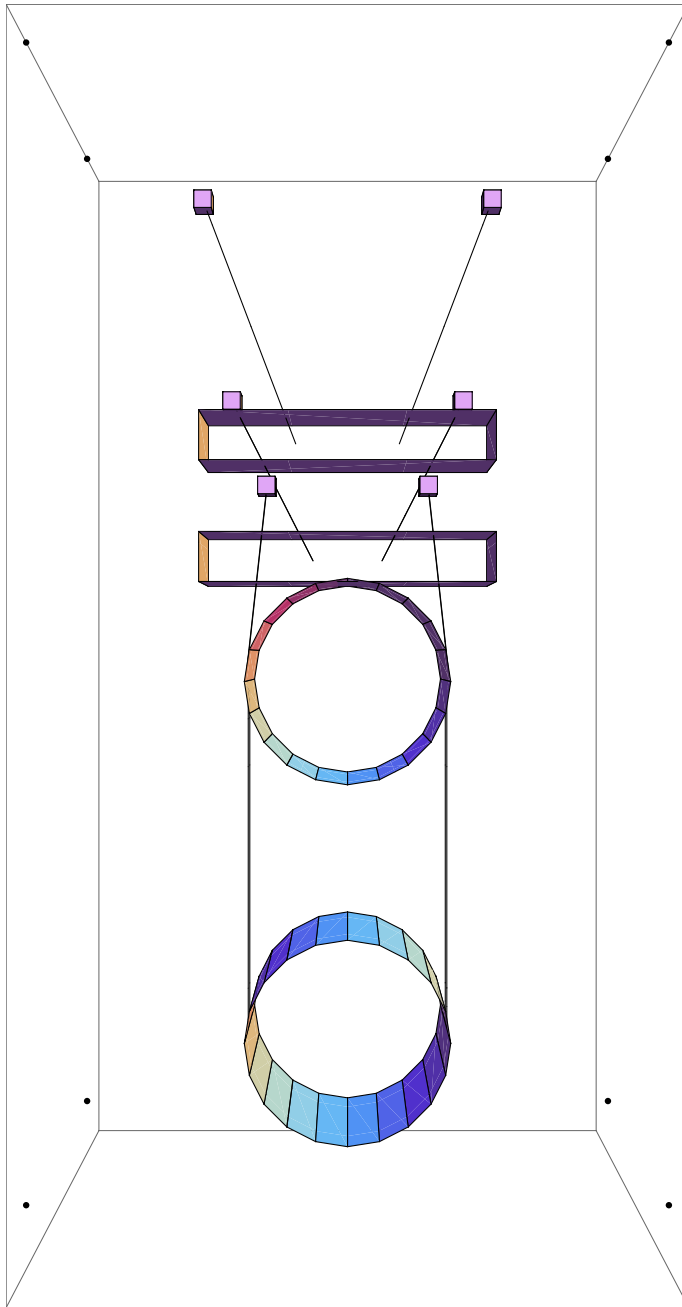
```
H22[[-14]]
```

```
2.33857
```

```
pretty[Chop[e2ni.eigenvectors2[[-14]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	0	0	0.83396	0	0	0
Mass U	0	0	0.471887	0	0	0
Mass 2	0	0	-0.186756	0	0	0
optic	0	0	-0.216692	0	0	0

```
DoWithStatus["Plotting stage 2 mode 14",
  eigenplot[eigenvectors2[[-14]], -.2, {-1, 0, 0}, floatmatrix2] ]
```



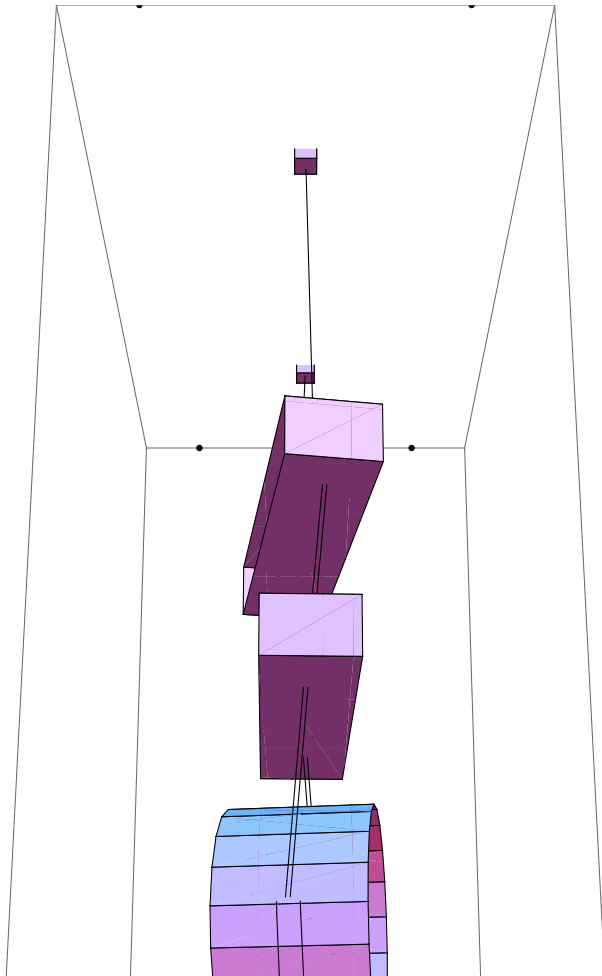
```
Hz2[[-15]]
```

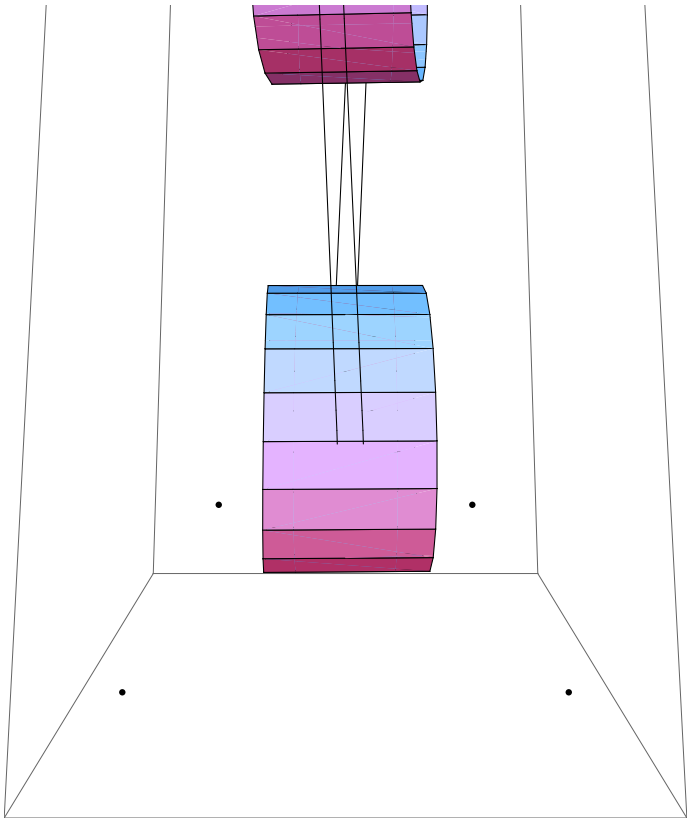
```
2.4084
```

```
pretty[Chop[e2ni.eigenvectors2[[-15]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	0	0	0	-0.748957	0	0
Mass U	0	0	0	-0.129827	0	0
Mass 2	0	0	0	0.629517	0	0
optic	0	0	0	-0.160985	0	0

```
DoWithStatus["Plotting stage 2 mode 15",  
eigenplot[eigenvectors2[[-15]], -.2, {0, -1, -.25}, floatmatrix2]]
```

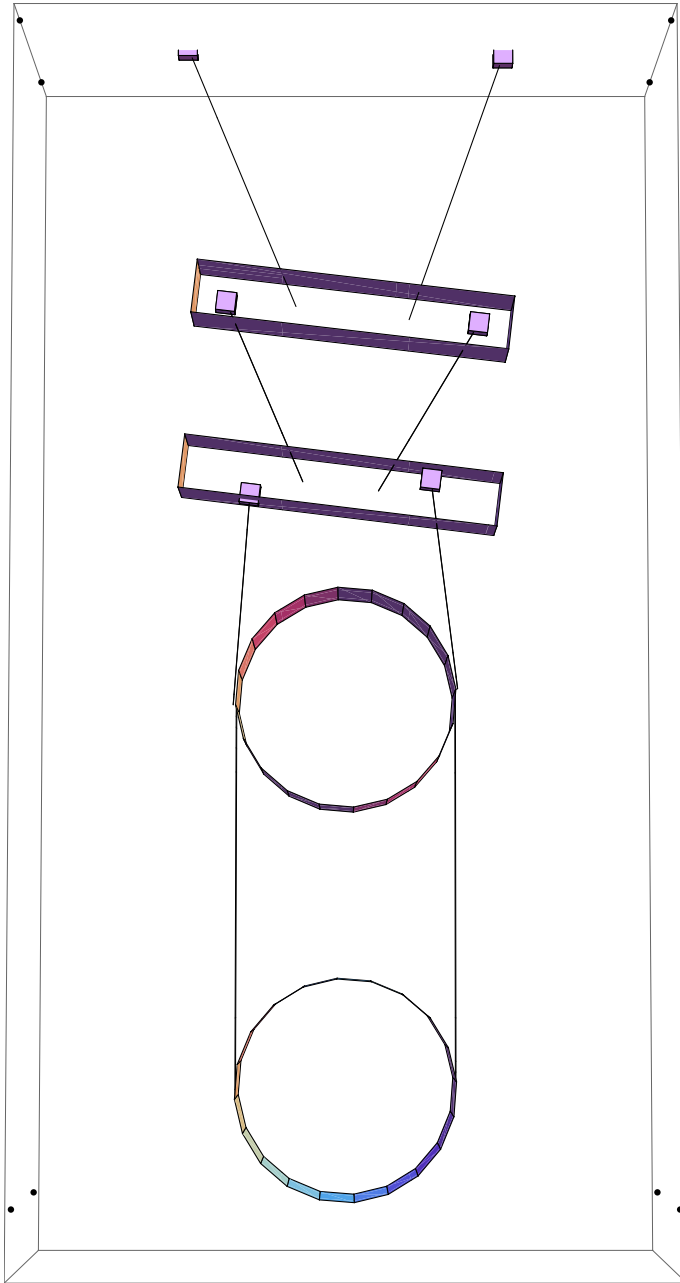




#16

```
Hz2[[-16]]  
  
2.69274  
  
pretty[Chop[e2ni.eigenvectors2[[-16]], 10^-4]]  
  
      x  y      z  yaw  pitch  roll  
Mass N 0 0.0571928  0 0    0    -0.585496  
Mass U 0 -0.0375896  0 0    0    -0.610852  
Mass 2 0 0.00181247  0 0    0     0.355904  
optic  0 -0.000166863 0 0    0     0.390768
```

```
DoWithStatus["Plotting stage 2 mode 16",
  eigenplot[eigenvectors2[[-16]], -0.2, {-3, 0, -0.25}, floatmatrix2]]
```



#17

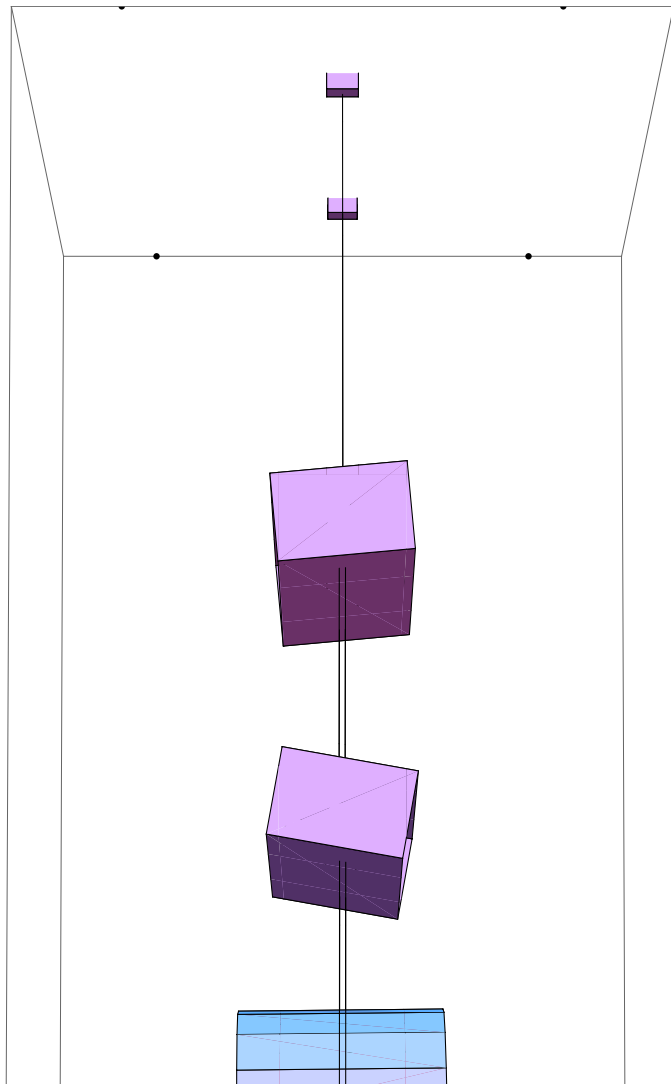
```
H22[[-17]]
```

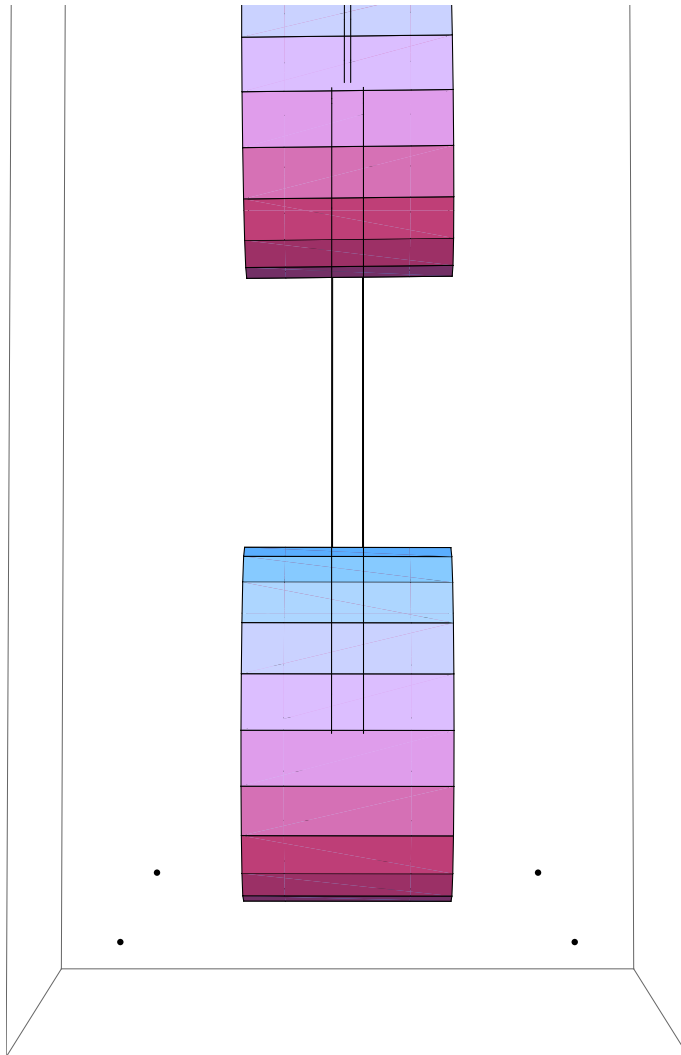
2.94539

```
pretty[Chop[e2ni.eigenvectors2[[-17]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	-0.000328131	0	0	0	0.458322	0
Mass U	0.000901196	0	0	0	-0.887174	0
Mass 2	-0.000284832	0	0	0	0.0531956	0
optic	0	0	0	0	-0.00571046	0

```
DoWithStatus["Plotting stage 2 mode 17",
  eigenplot[eigenvectors2[[-17]], -.2, {0, -3, -.25}, floatmatrix2]]
```





#18

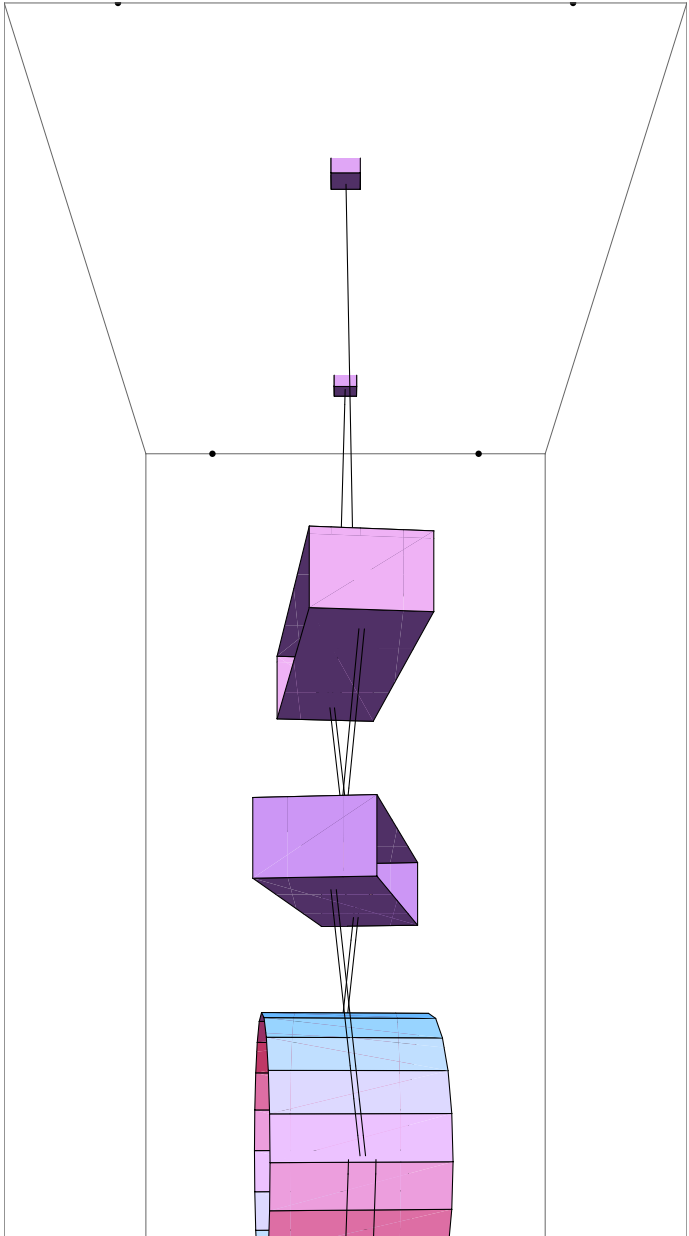
Hz2[[-18]]

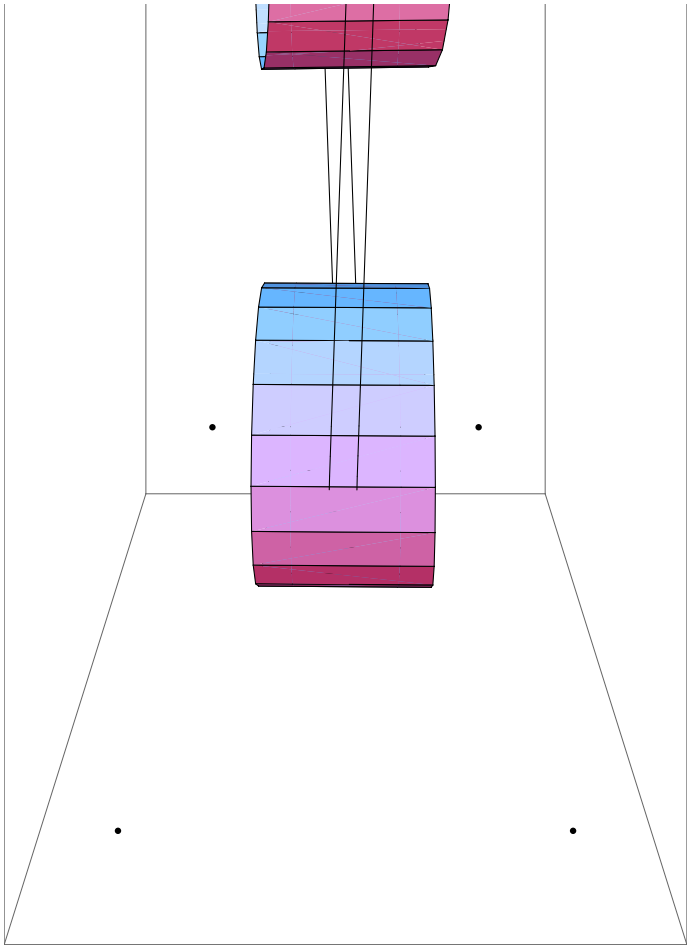
3.04627

pretty[Chop[e2ni.eigenvectors2[[-18]], 10^-4]]

	x	y	z	yaw	pitch	roll
Mass N	0	0	0	-0.545103	0	0
Mass U	0	0	0	0.64448	0	0
Mass 2	0	0	0	-0.530583	0	0
optic	0	0	0	0.0773906	0	0

DoWithStatus["Plotting stage 2 mode 18",
eigenplot[eigenvectors2[[-18]], -.2, {0, -1, 0}, floatmatrix2]]

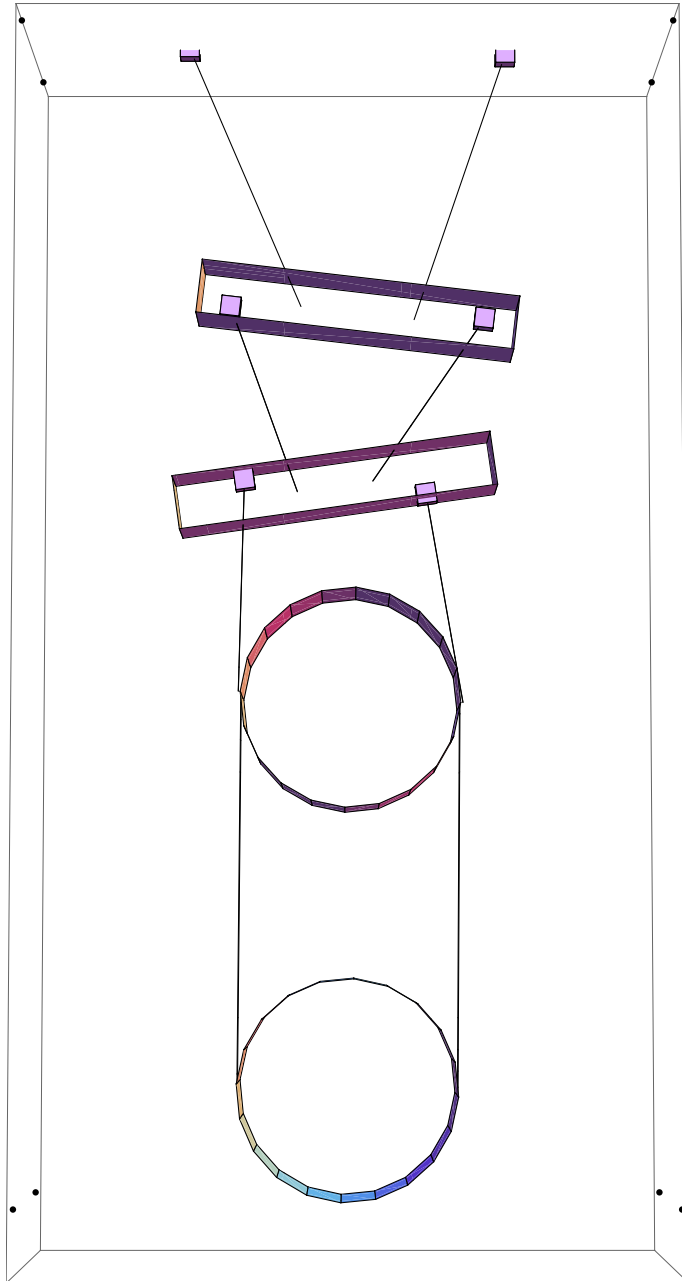




#19

```
Hz2[[-19]]  
3.3254  
  
pretty[Chop[e2ni.eigenvectors2[[-19]], 10^-4]]  
  
      x y      z yaw pitch roll  
Mass N 0 0.0807821 0 0 0 -0.584063  
Mass U 0 -0.0988948 0 0 0 0.701138  
Mass 2 0 0.0223703 0 0 0 -0.25356  
optic 0 -0.000844366 0 0 0 -0.293558
```

```
DoWithStatus["Plotting stage 2 mode 19",
eigenplot[eigenvectors2[[-19]], -0.2, {-3, 0, -0.25}, floatmatrix2]]
```



#20

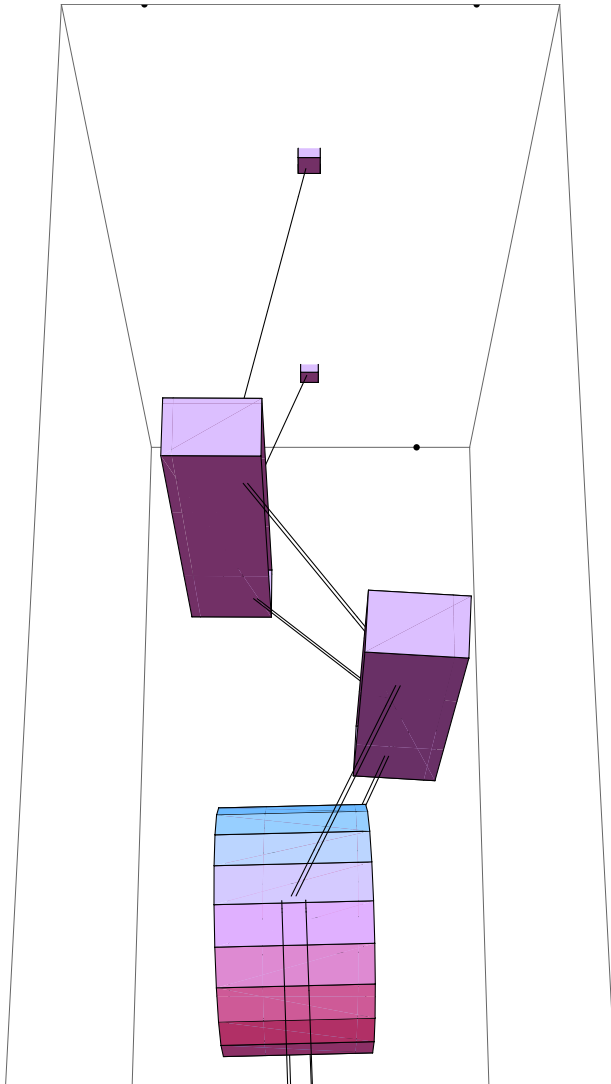
```
H22[[-20]]
```

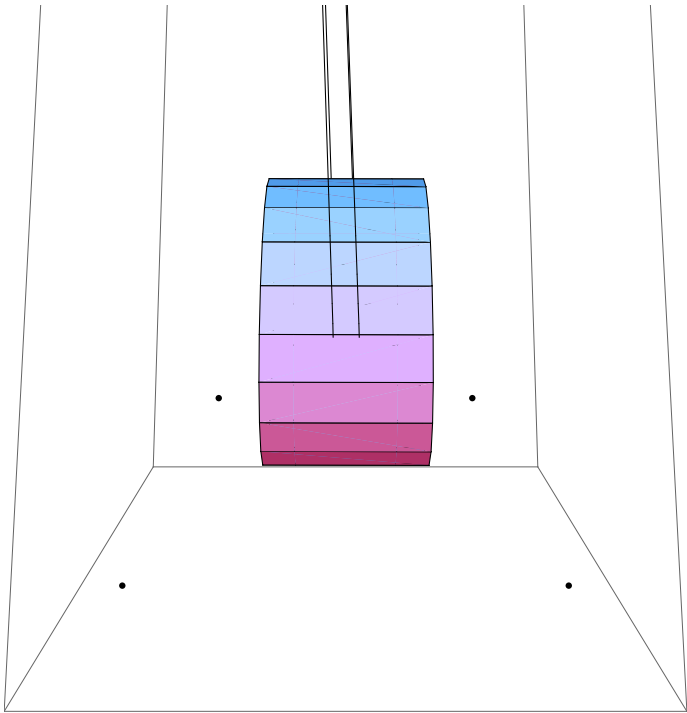
```
3.41893
```

```
pretty[Chop[e2ni.eigenvectors2[[-20]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	0.645083	0	0	0	-0.0218603	0
Mass U	-0.67746	0	0	0	-0.312619	0
Mass 2	0.104744	0	0	0	0.124974	0
optic	-0.00384559	0	0	0	-0.0101753	0

```
DoWithStatus["Plotting stage 2 mode 20",
eigenplot[eigenvectors2[[-20]], -.2, {0, -1, -.25}, floatmatrix2]]
```



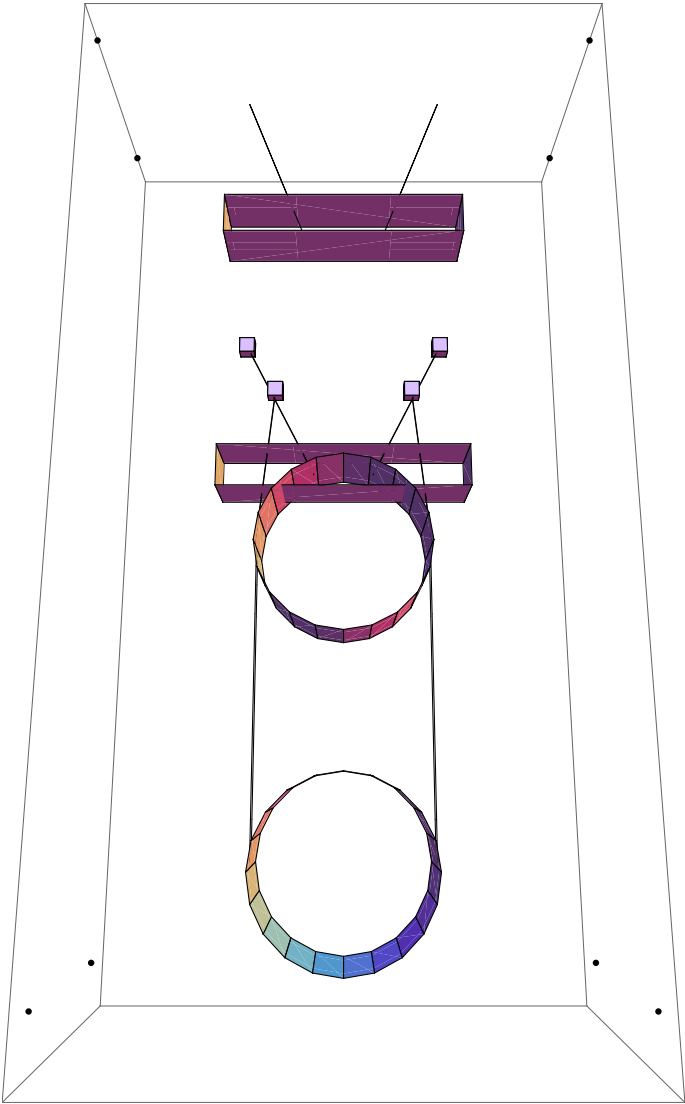


#21

```
Hz2[[-21]]
3.76036
pretty[Chop[e2ni.eigenvectors2[[-21]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	0	0	-0.539786	0	0	0
Mass U	0	0	0.827166	0	0	0
Mass 2	0	0	-0.0845111	0	0	0
optic	0	0	-0.131473	0	0	0

```
DoWithStatus["Plotting stage 2 mode 21",
eigenplot[eigenvectors2[[-21]], -.2, {-1, 0, -.25}, floatmatrix2]]
```



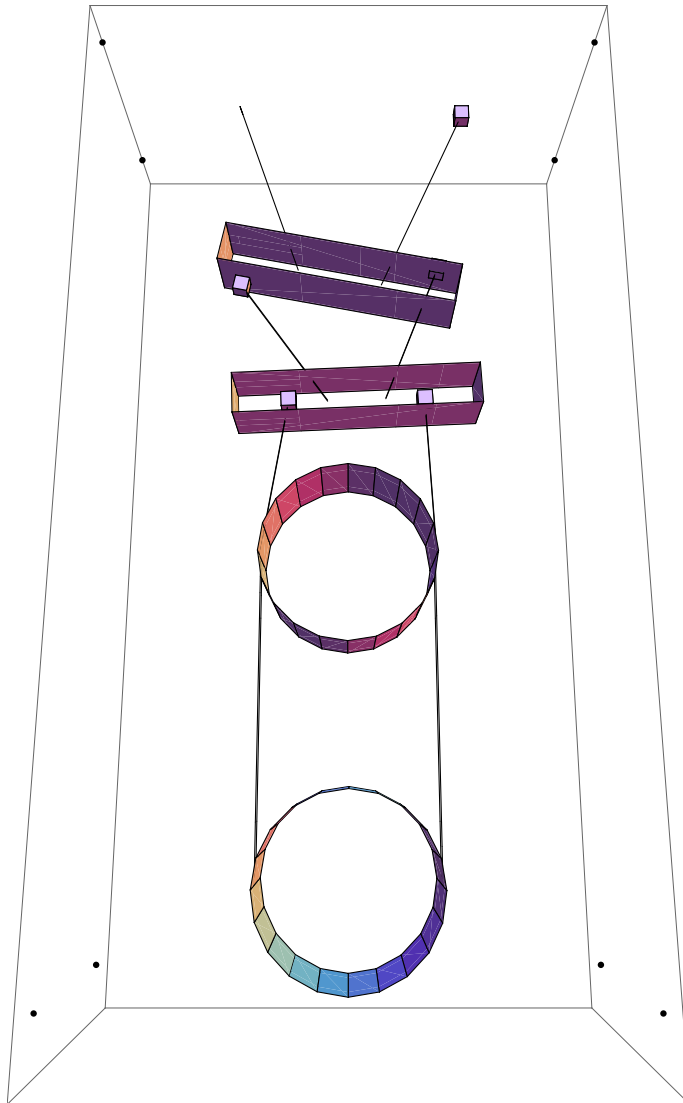
#22

```
Hz2[[-22]]
5.09938

pretty[Chop[e2ni.eigenvectors2[[-22]], 10^-4]]

      x  y      z  yaw  pitch  roll
Mass N 0 -0.0908714 0 0    0    -0.966863
Mass U 0 0.0844083  0 0    0     0.222209
Mass 2 0 -0.00521035 0 0    0    -0.0110817
optic  0 0          0 0    0    -0.0163093
```

```
DoWithStatus["Plotting stage 2 mode 22",
eigenplot[eigenvectors2[[-22]], -.2, {-1, 0, -.25}, floatmatrix2]]
```



#23

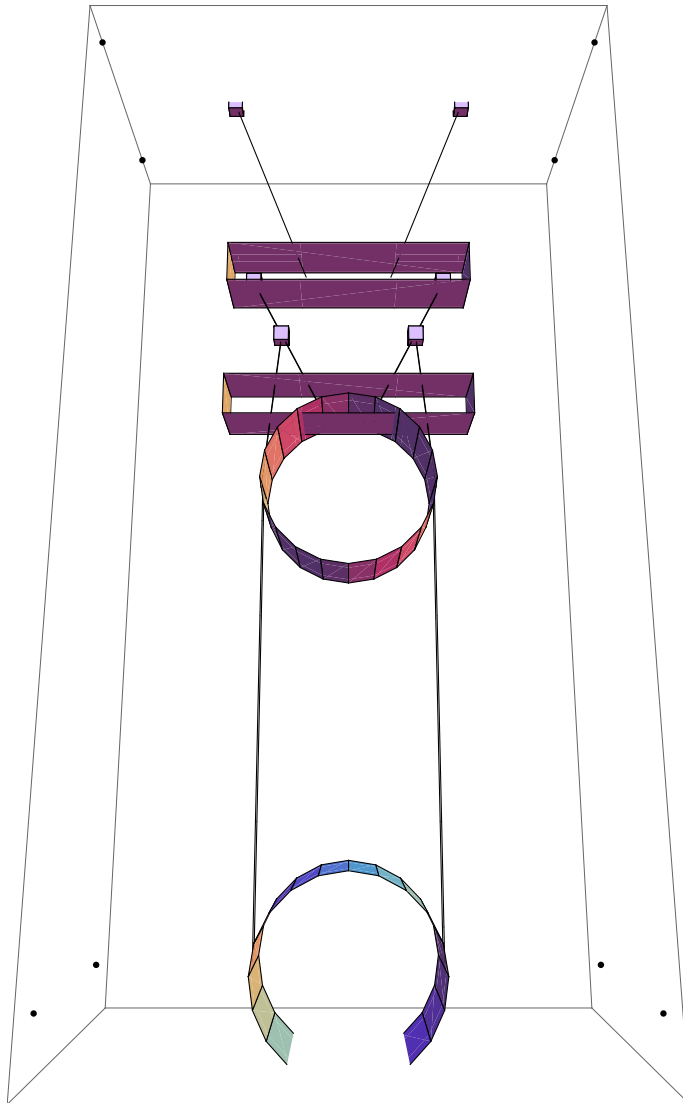
```
Hz2[[-23]]
```

```
9.00227
```

```
pretty[Chop[e2ni.eigenvectors2[[-23]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	0	0	-0.00366329	0	0	0
Mass U	0	0	0.0649154	0	0	0
Mass 2	0	0	-0.721681	0	0	0
optic	0	0	0.689166	0	0	0

```
DoWithStatus["Plotting stage 2 mode 23",
eigenplot[eigenvectors2[[-23]], -.2, {-1, 0, -.25}, floatmatrix2]]
```



#24

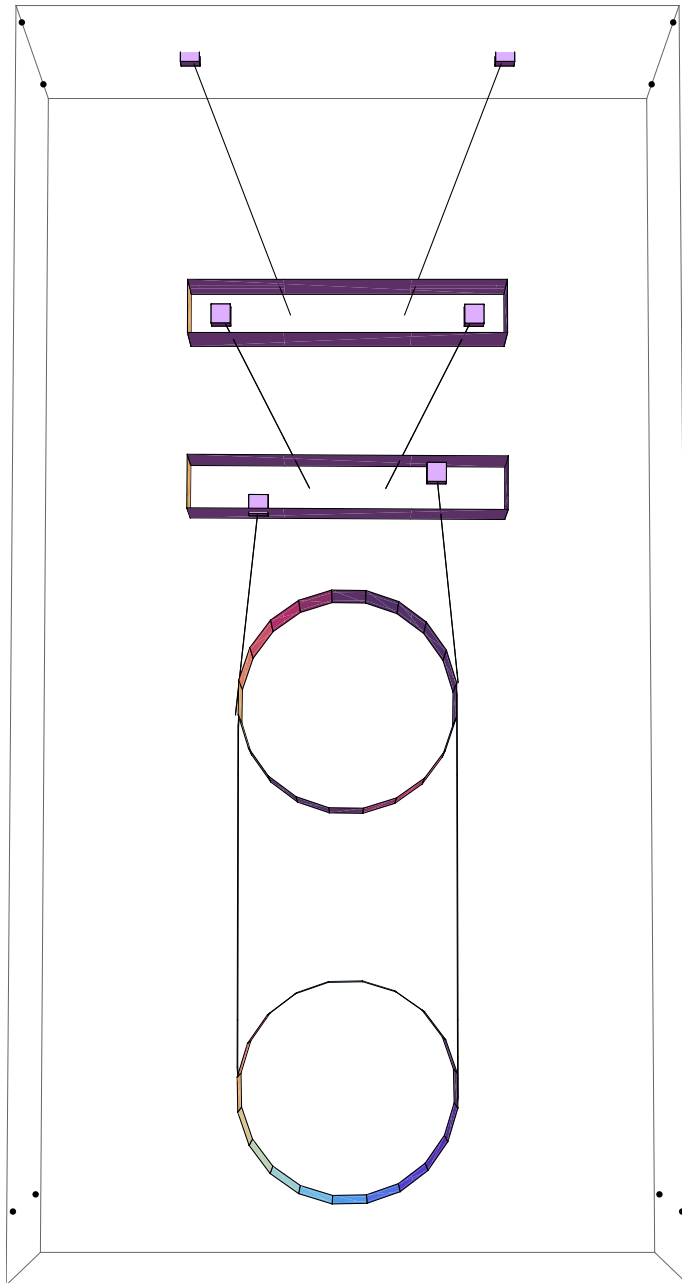
```
Hz2[[-24]]
```

```
12.8743
```

```
pretty[Chop[e2ni.eigenvectors2[[-24]], 10^-4]]
```

	x	y	z	yaw	pitch	roll
Mass N	0	0	0	0	0	0.000542821
Mass U	0	0.000693142	0	0	0	-0.0254448
Mass 2	0	-0.000365869	0	0	0	0.722407
optic	0	0	0	0	0	-0.690999

```
DoWithStatus["Plotting stage 2 mode 24",
eigenplot[eigenvectors2[[-24]], -.2, {-3, 0, -.25}, floatmatrix2]]
```

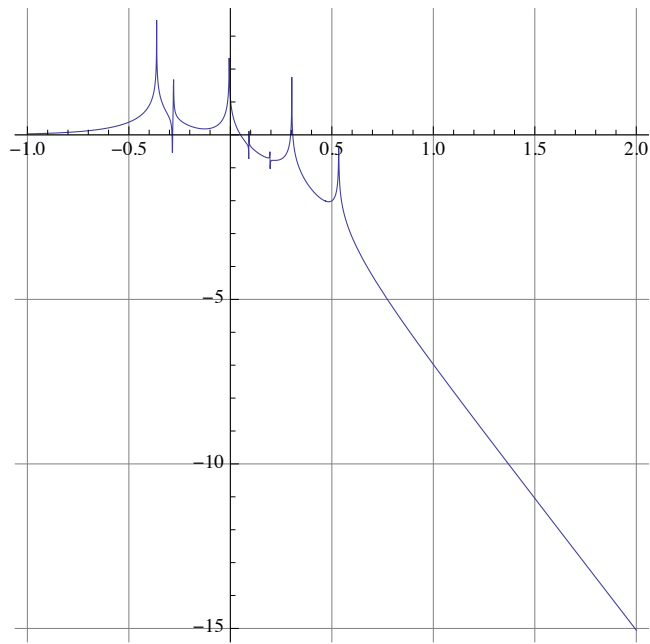


■ Structure displacement to optic displacement transfer function plots

■ x

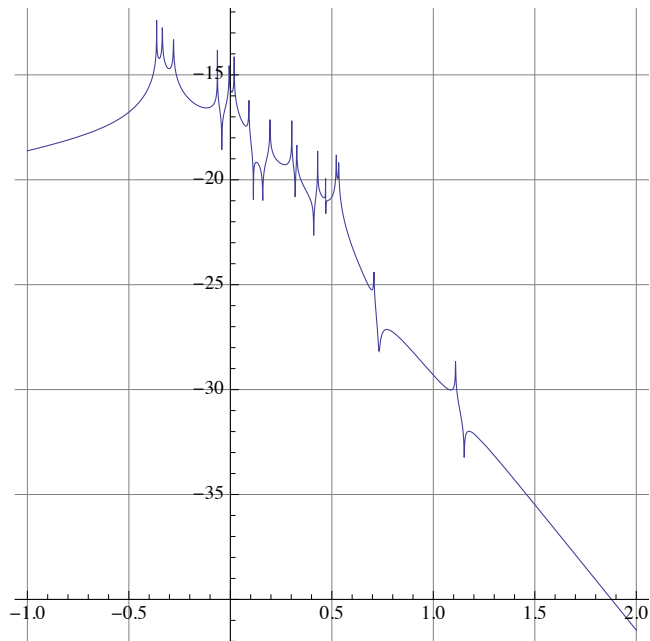
x to x


```
plotTF[eom2,coupling2,supportxinput,opticxoutput,0.1,100]
```



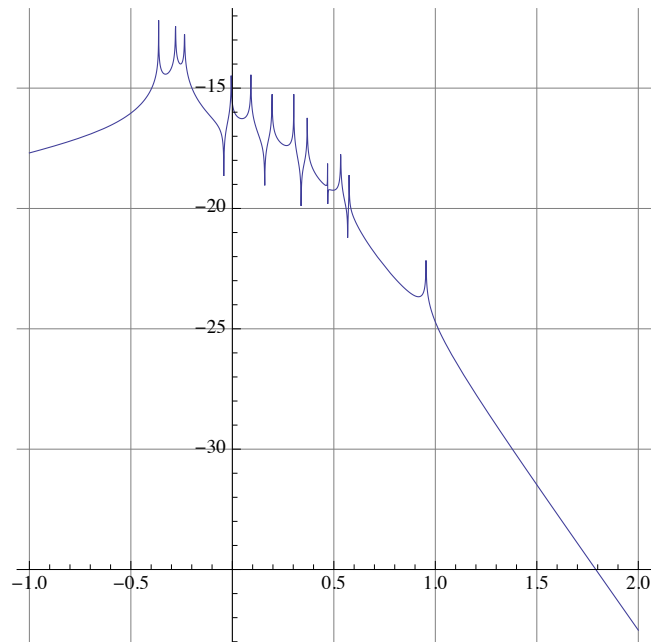
x to y

```
plotTF[eom2,coupling2,supportxinput,opticyoutput,0.1,100]
```



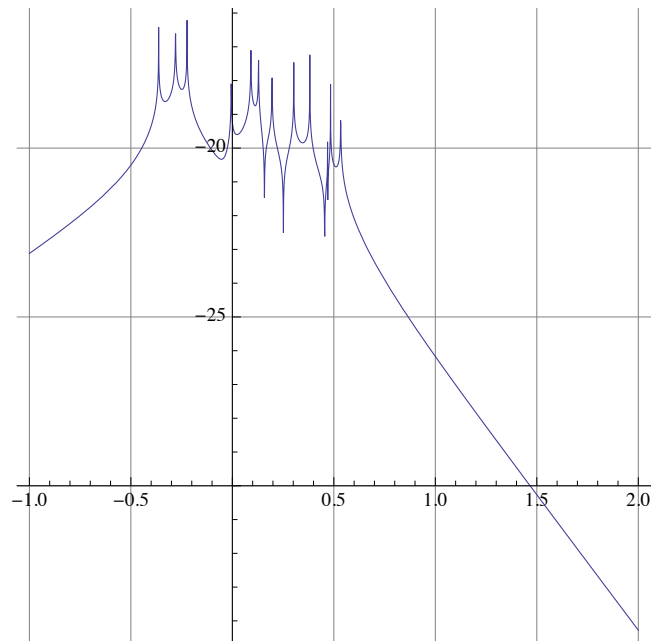
x to z

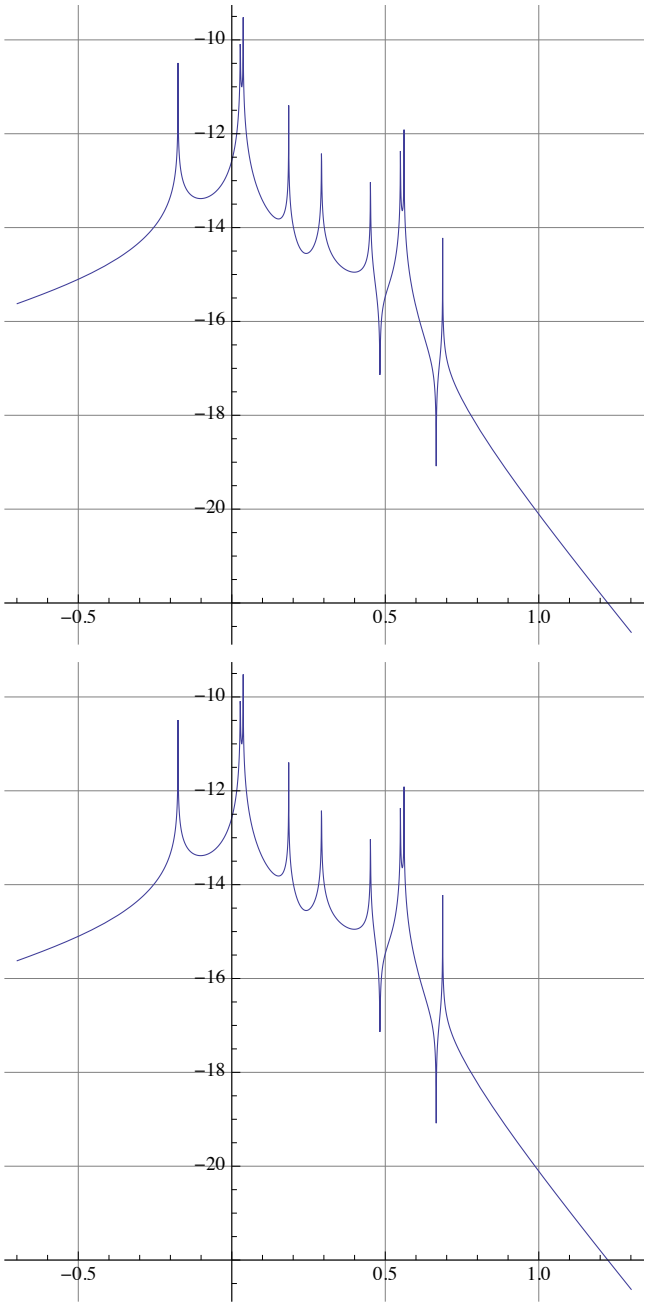
```
plotTF[eom2,coupling2,supportxinput,opticzoutput,0.1,100]
```



x to yaw

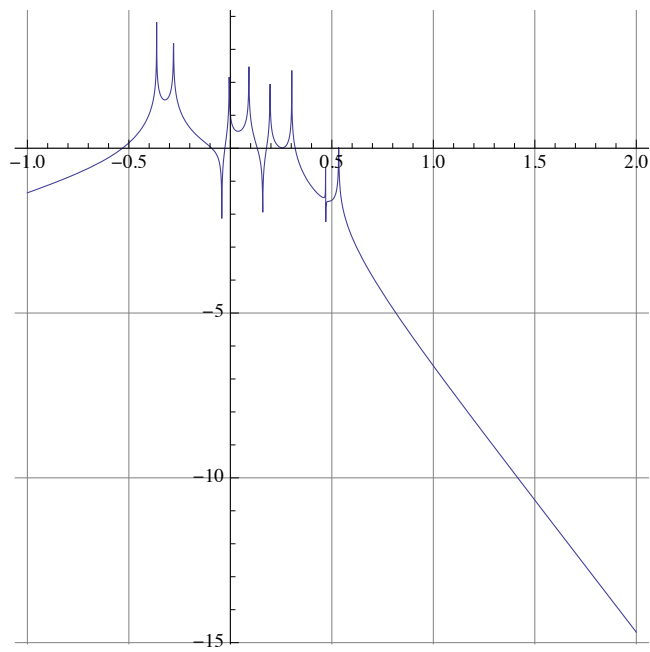
```
plotTF[eom2,coupling2,supportxinput,opticyawoutput,0.1,100]
```





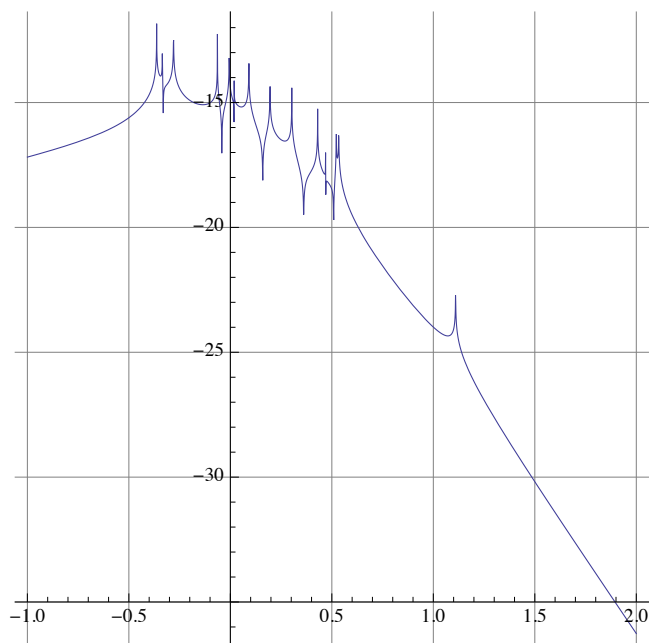
x to pitch

```
plotTF[eom2,coupling2,supportxinput,opticpitchoutput,0.1,100]
```



x to roll

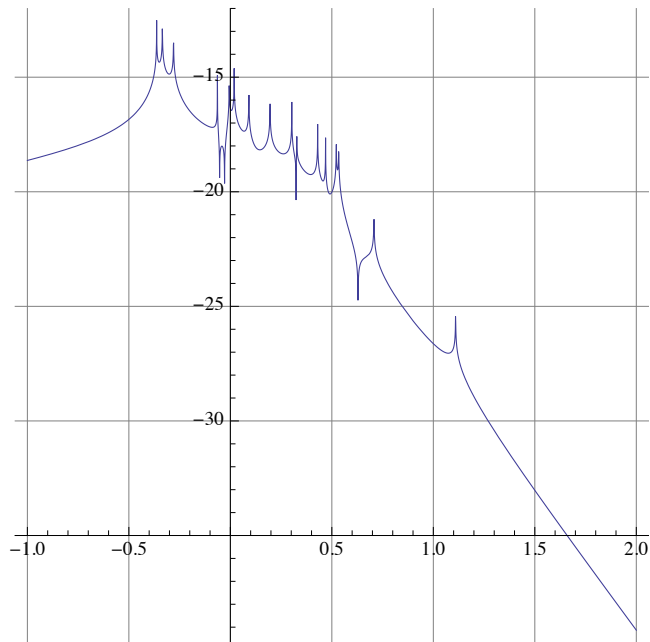
```
plotTF[eom2,coupling2,supportxinput,opticrolloutput,0.1,100]
```



■ y

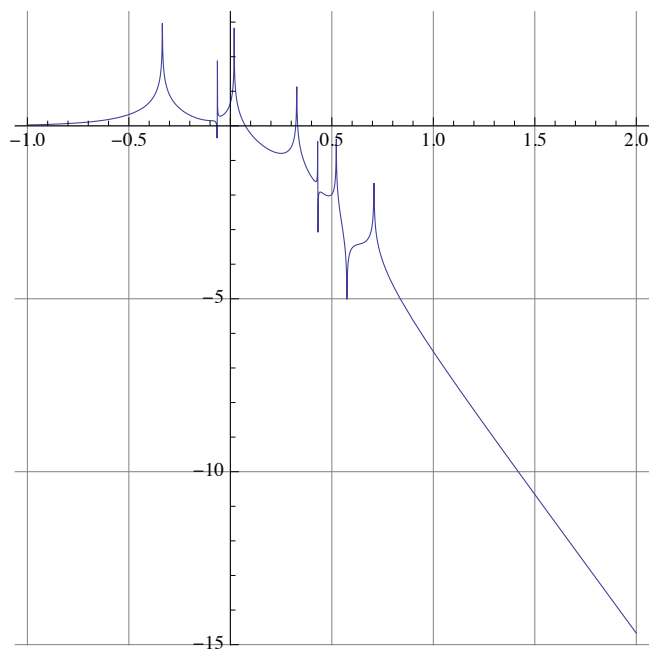
y to x

```
plotTF[eom2,coupling2,supportyinput,opticxoutput,0.1,100]
```



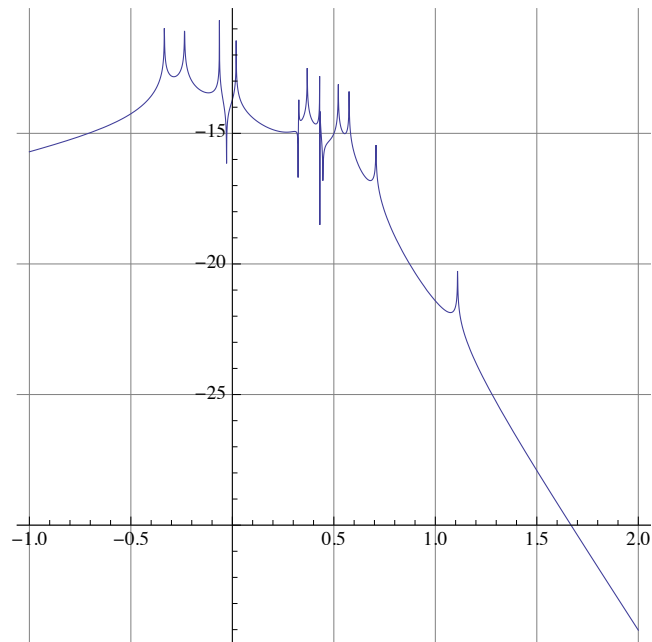
y to y

```
plotTF[eom2,coupling2,supportyinput,opticyoutput,0.1,100]
```



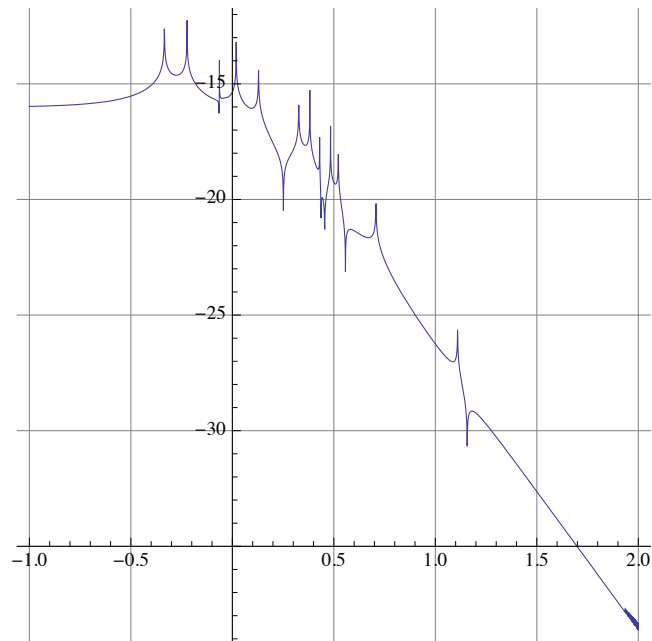
y to z

```
plotTF[eom2,coupling2,supportyinput,opticzoutput,0.1,100]
```



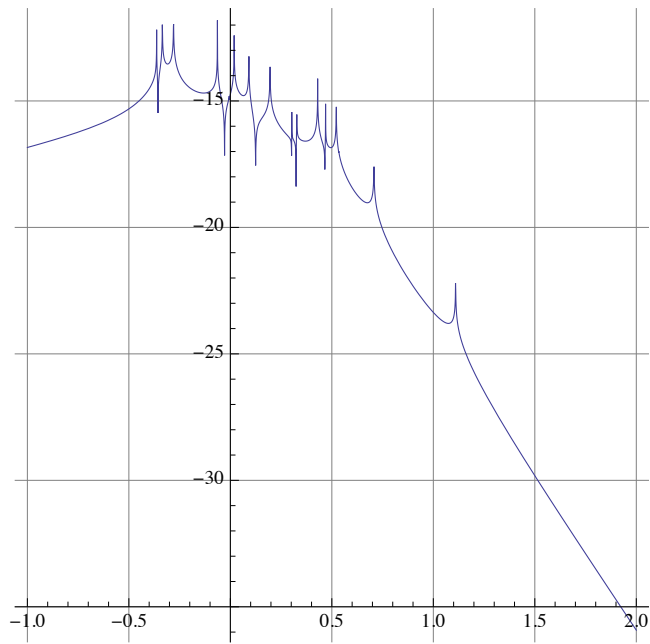
y to yaw

```
plotTF[eom2,coupling2,supportyinput,opticyawoutput,0.1,100]
```



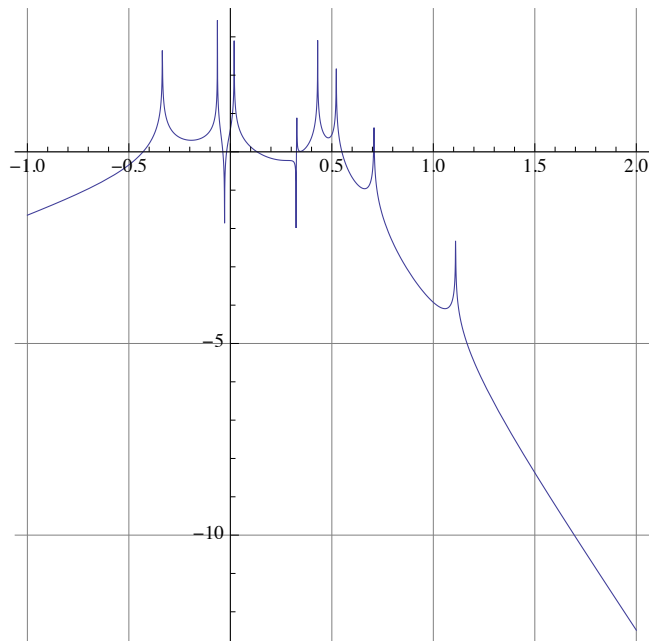
y to pitch

```
plotTF[eom2,coupling2,supportyinput,opticpitchoutput,0.1,100]
```



y to roll

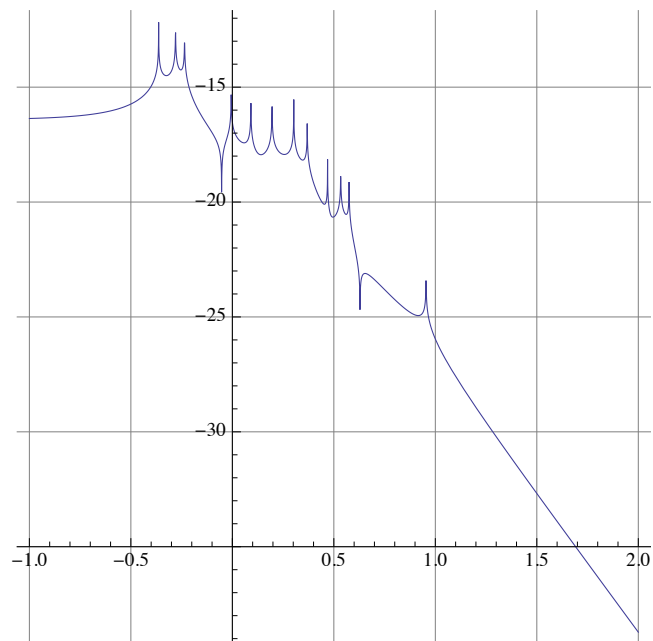
```
plotTF[eom2,coupling2,supportyinput,opticrolloutput,0.1,100]
```



■ z

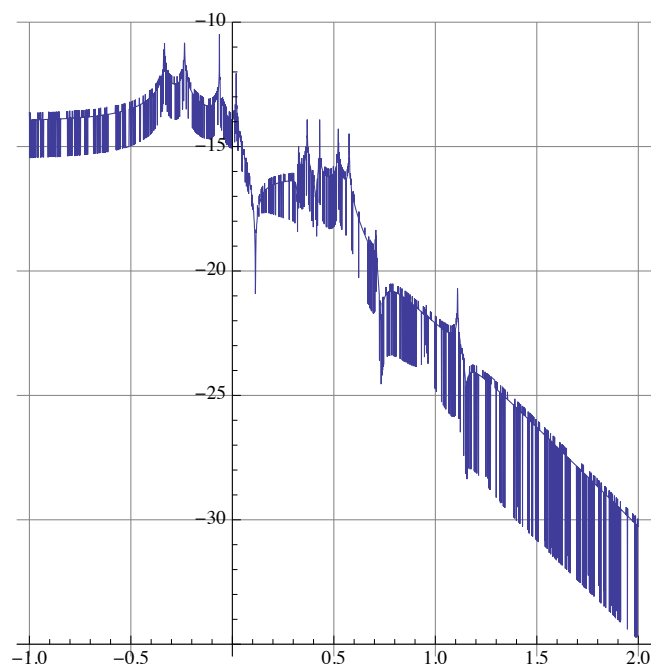
z to x

`plotTF[eom2,coupling2,supportzinput,opticxoutput,0.1,100]`



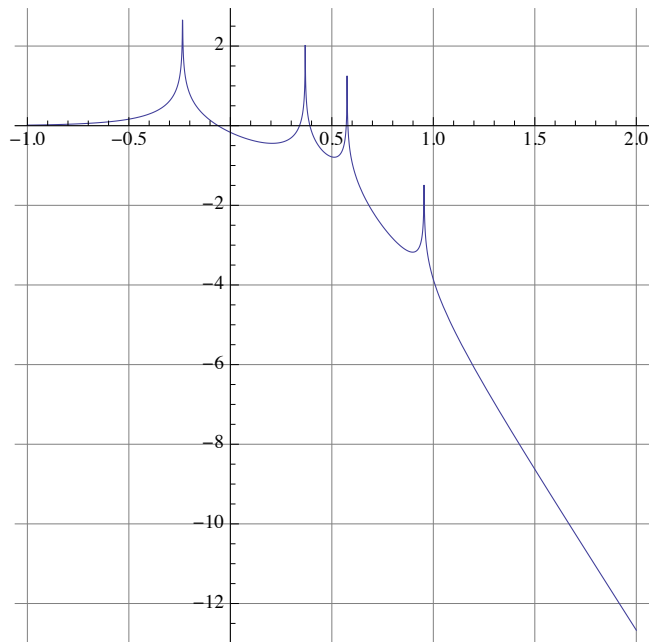
z to y

`plotTF[eom2,coupling2,supportzinput,opticyoutput,0.1,100]`



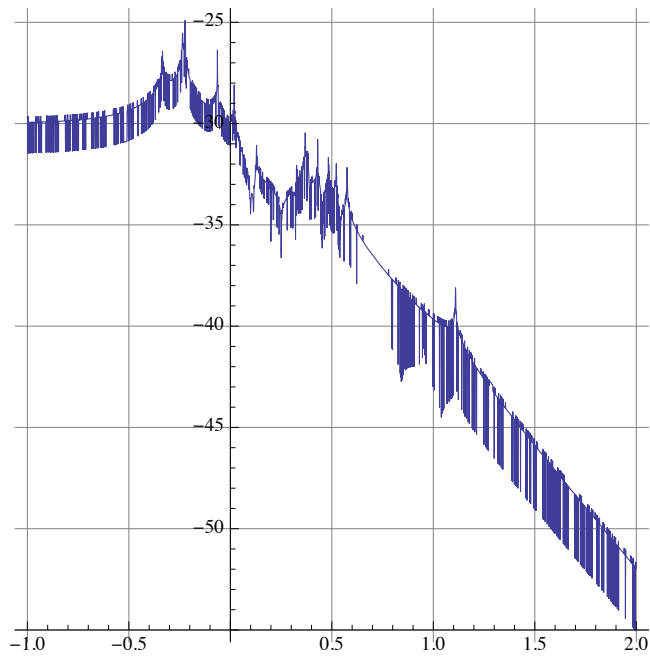
z to z


```
plotTF[eom2,coupling2,supportzinput,opticzoutput,0.1,100]
```



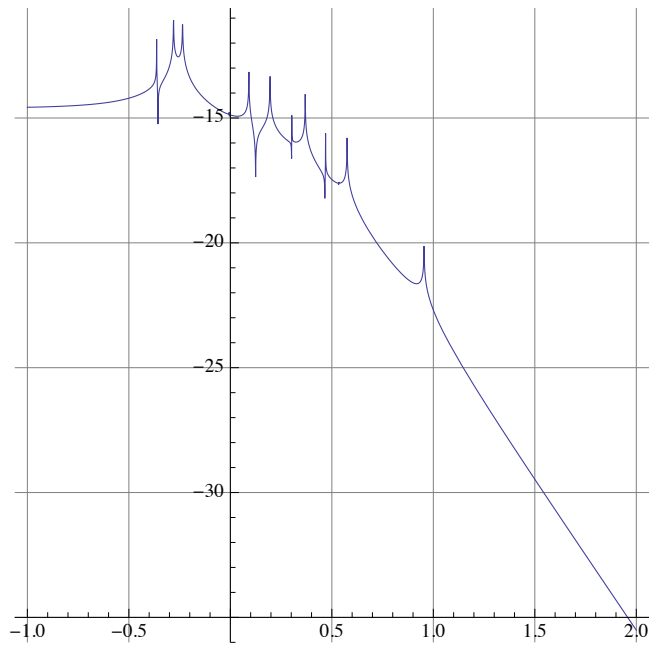
z to yaw

```
plotTF[eom2,coupling2,supportzinput,opticyawoutput,0.1,100]
```



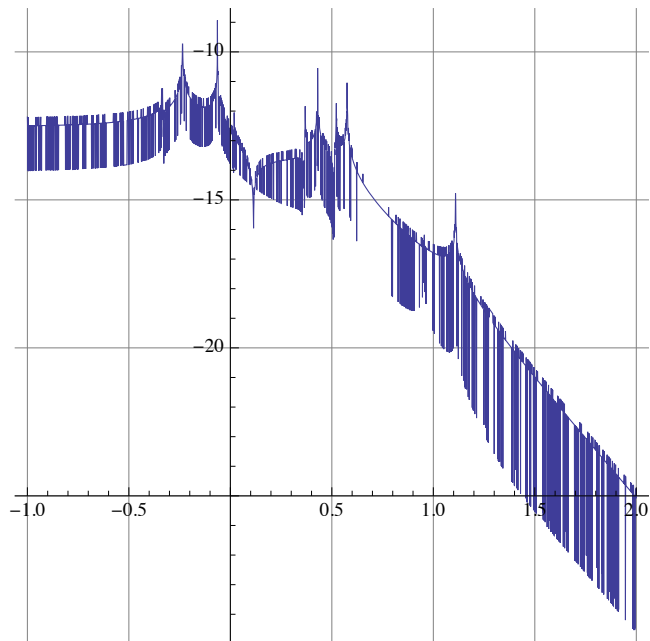
z to pitch

```
plotTF[eom2,coupling2,supportzinput,opticpitchoutput,0.1,100]
```



z to roll

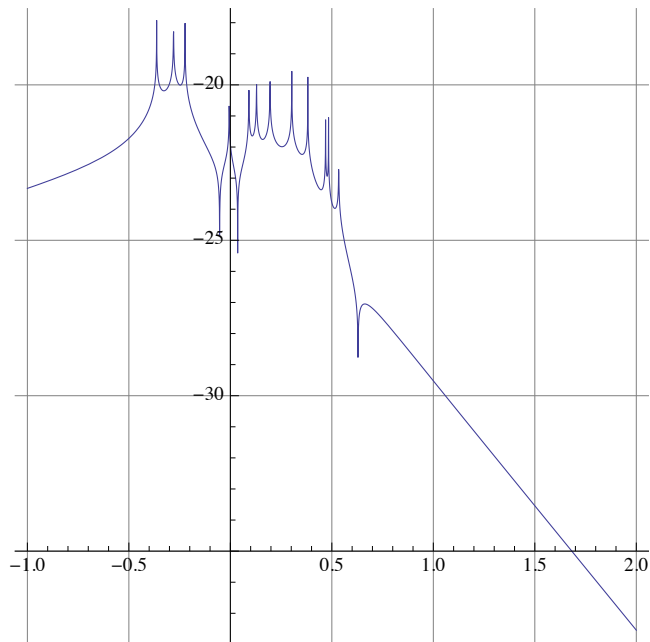
```
plotTF[eom2,coupling2,supportzinput,opticrolloutput,0.1,100]
```



■ yaw

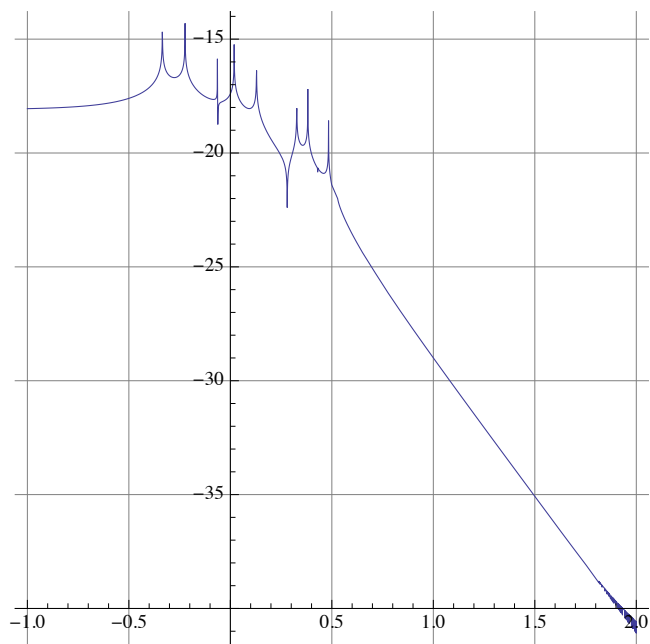
yaw to x

```
plotTF[eom2,coupling2,supportyawinput,opticxoutput,0.1,100]
```



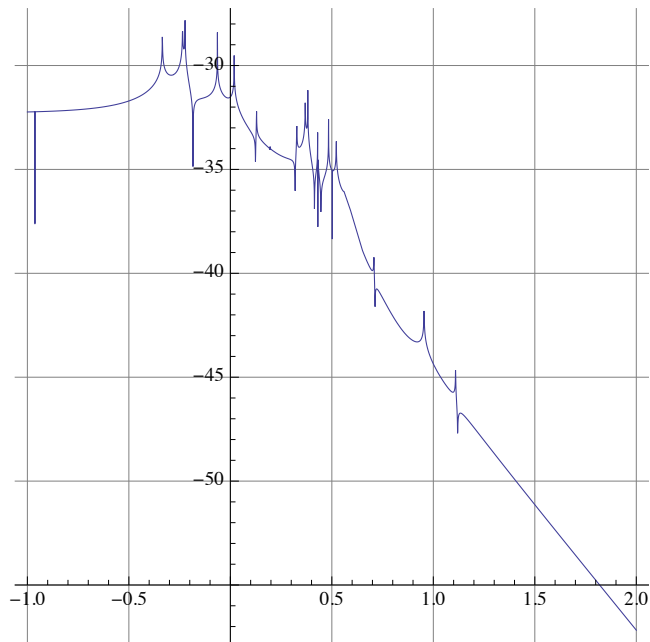
yaw to y

```
plotTF[eom2,coupling2,supportyawinput,opticyoutput,0.1,100]
```



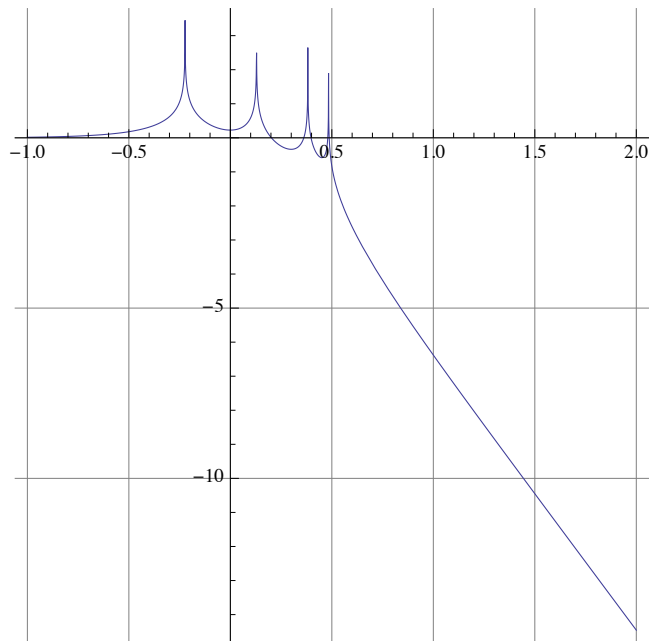
yaw to z

```
plotTF[eom2,coupling2,supportyawinput,opticzoutput,0.1,100]
```



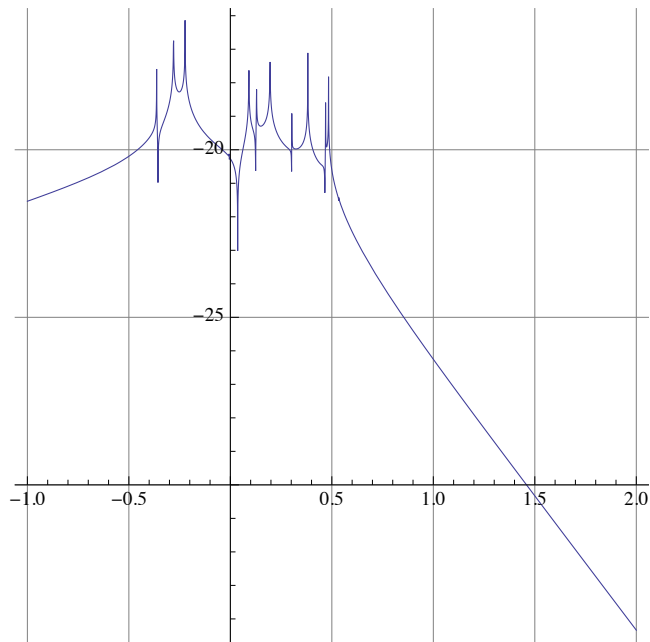
yaw to yaw

```
plotTF[eom2,coupling2,supportyawinput,opticyawoutput,0.1,100]
```



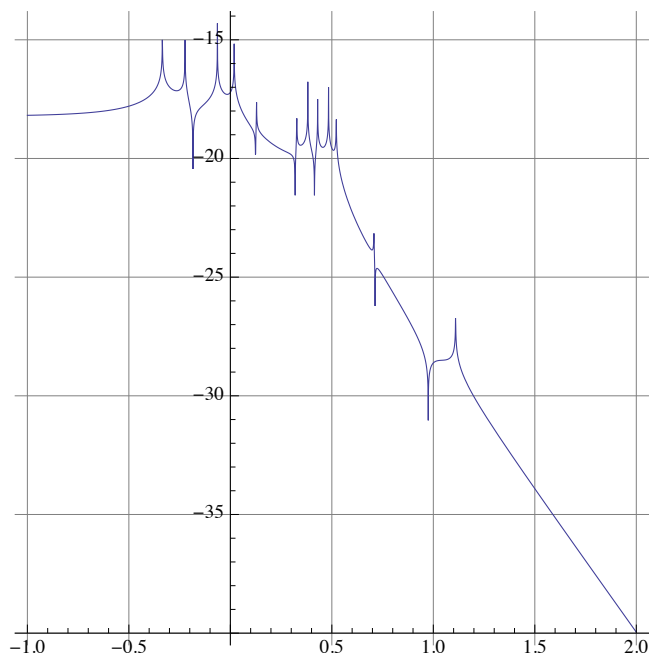
yaw to pitch

```
plotTF[eom2,coupling2,supportyawinput,opticpitchoutput,0.1,100]
```



yaw to roll

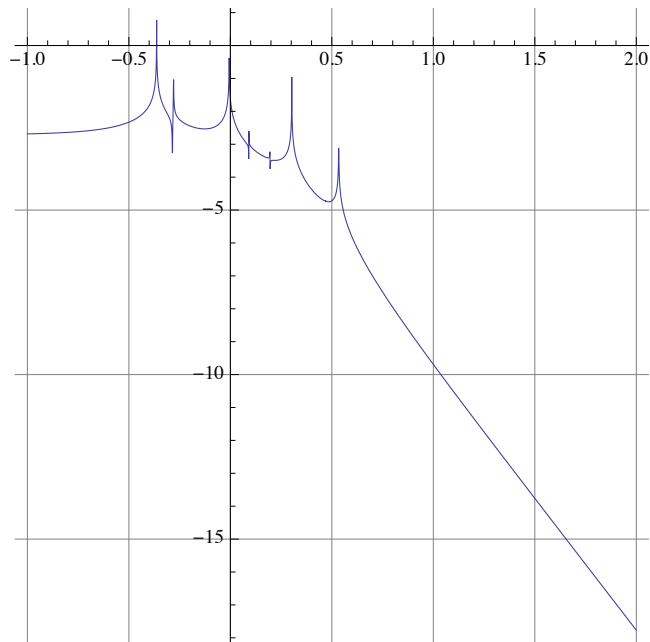
```
plotTF[eom2,coupling2,supportyawinput,opticrolloutput,0.1,100]
```



■ pitch

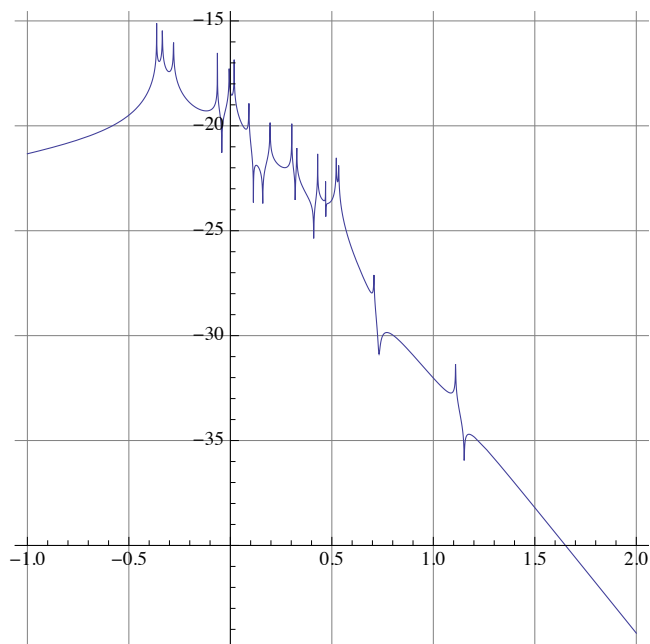
pitch to x

`plotTF[eom2,coupling2,supportpitchinput,opticxoutput,0.1,100]`



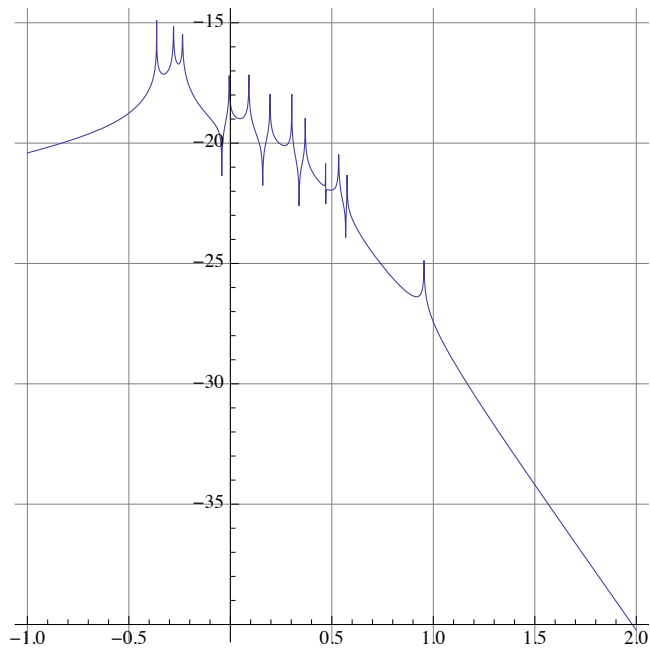
pitch to y

`plotTF[eom2,coupling2,supportpitchinput,opticyoutput,0.1,100]`



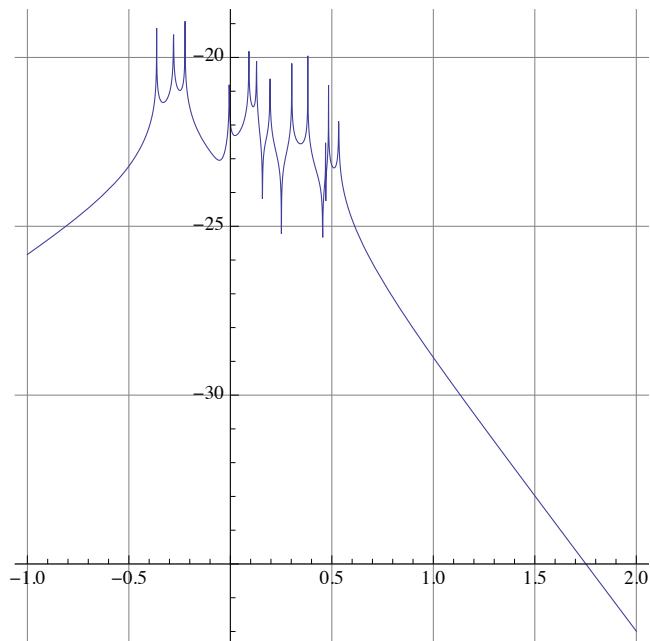
pitch to z

```
plotTF[eom2,coupling2,supportpitchinput,opticzoutput,0.1,100]
```



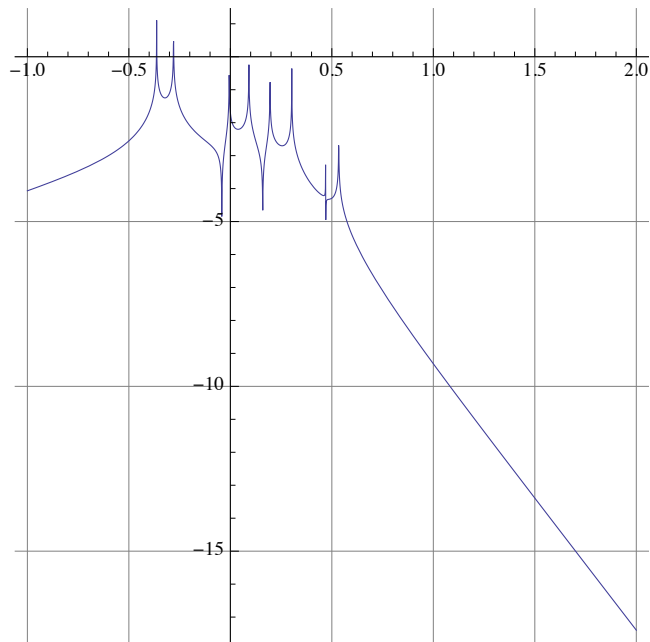
pitch to yaw

```
plotTF[eom2,coupling2,supportpitchinput,opticyawoutput,0.1,100]
```



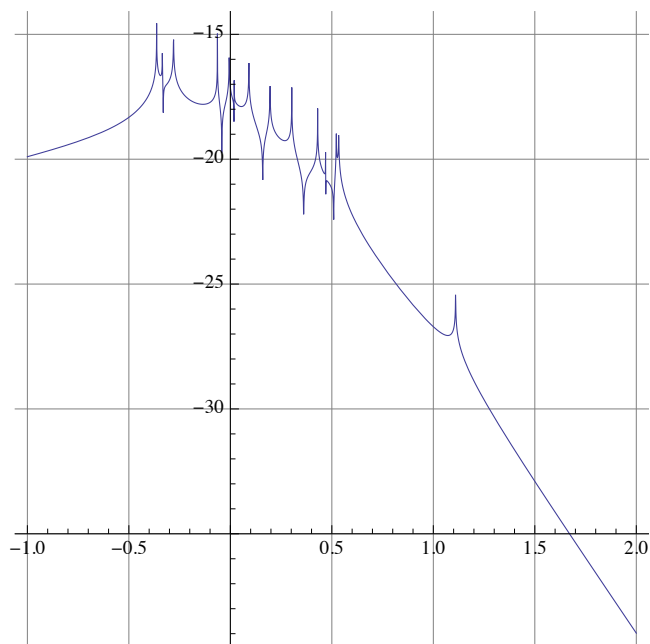
pitch to pitch

```
plotTF[eom2,coupling2,supportpitchinput,opticpitchoutput,0.1,100]
```



pitch to roll

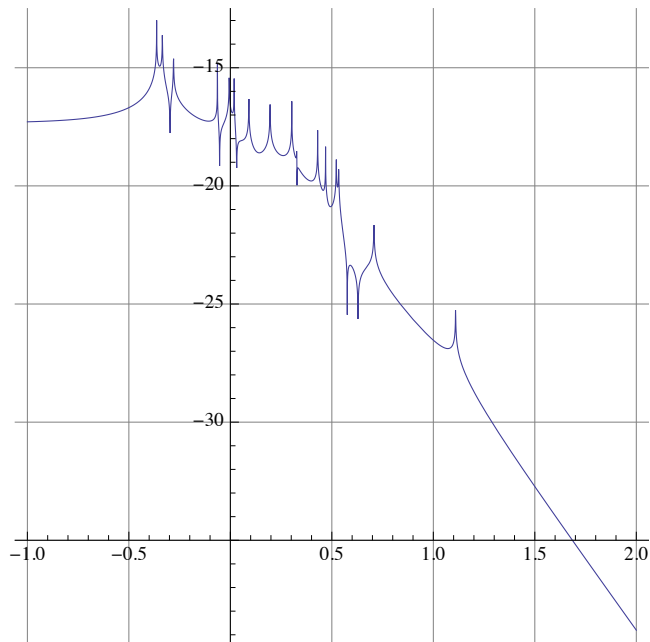
```
plotTF[eom2,coupling2,supportpitchinput,opticrolloutput,0.1,100]
```



■ roll

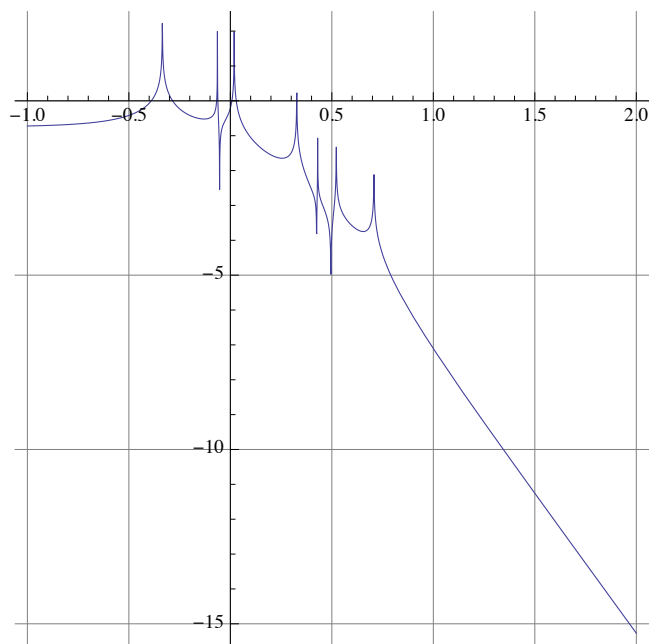
roll to x


```
plotTF[eom2,coupling2,supportrollinput,opticxoutput,0.1,100]
```



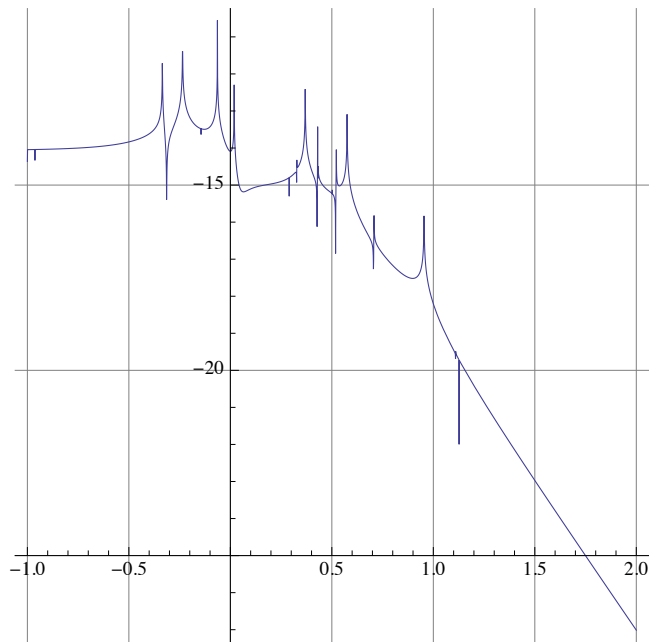
roll to y

```
plotTF[eom2,coupling2,supportrollinput,opticyoutput,0.1,100]
```



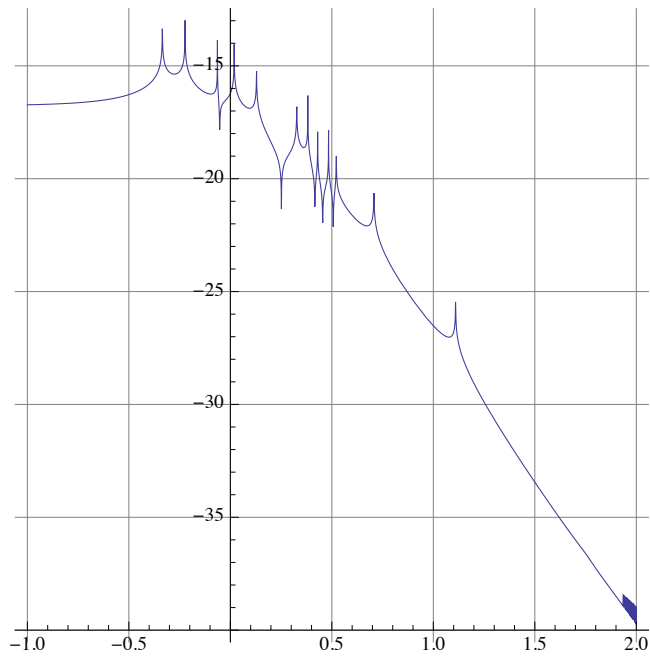
roll to z

```
plotTF[eom2,coupling2,supportrollinput,opticzoutput,0.1,100]
```



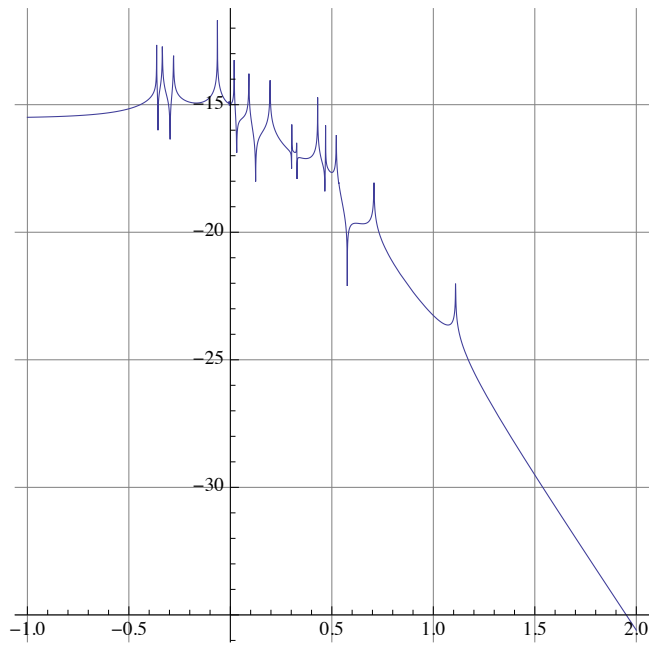
roll to yaw

```
plotTF[eom2,coupling2,supportrollinput,opticyawoutput,0.1,100]
```



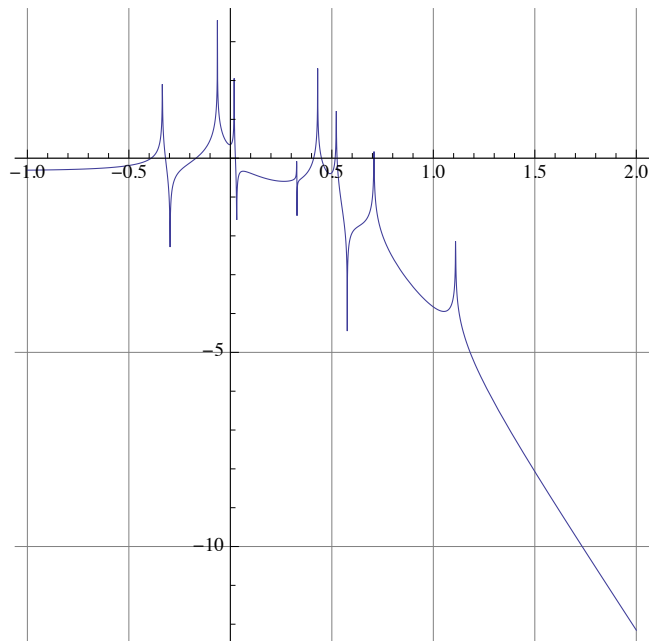
roll to pitch

```
plotTF[eom2,coupling2,supportrollinput,opticpitchoutput,0.1,100]
```



roll to roll

```
plotTF[eom2,coupling2,supportrollinput,opticrolloutput,0.1,100]
```

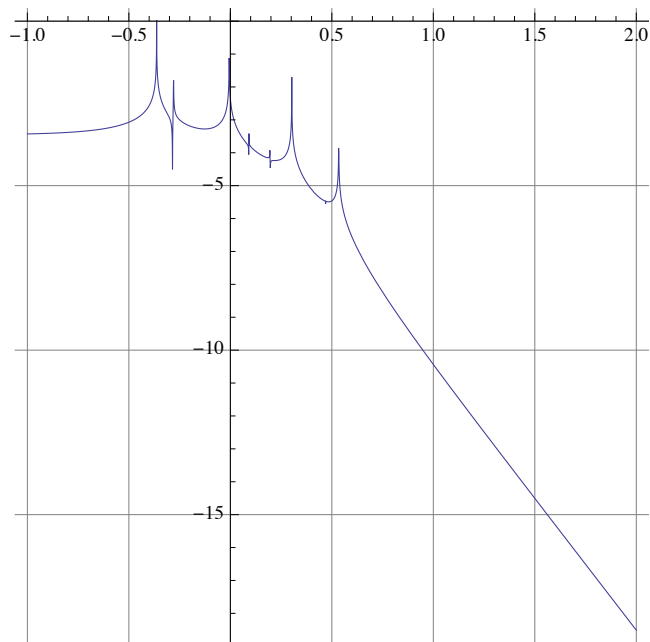


■ Top mass force/torque to optic displacement transfer function plots

■ x

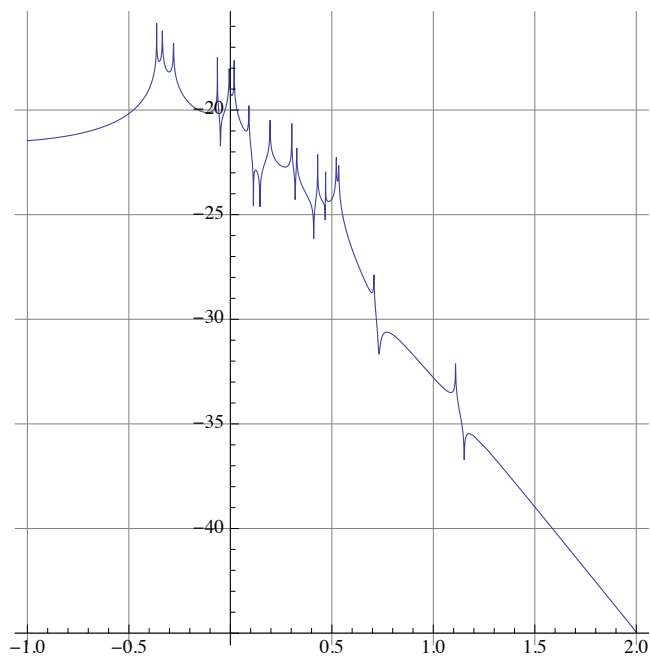
x to x

```
plotTFf[eom2,makeinputvector[x0],opticxoutput,0.1,100]
```



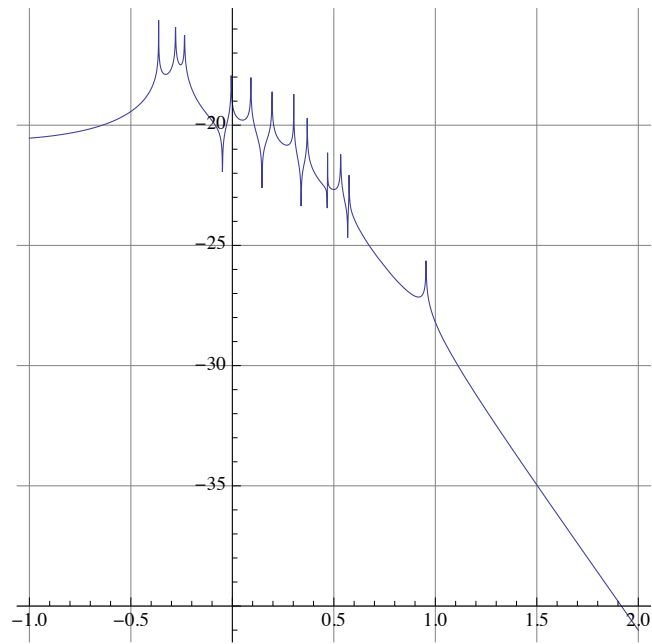
x to y

```
plotTFf[eom2,makeinputvector[x0],opticyoutput,0.1,100]
```



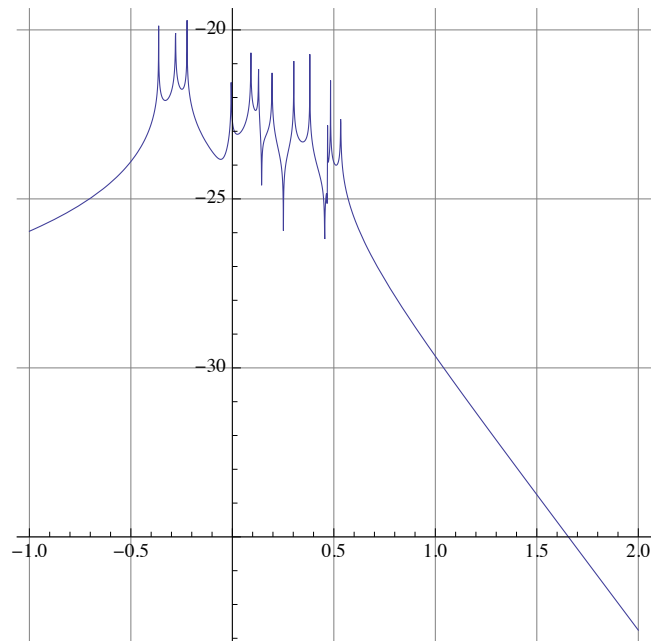
x to z

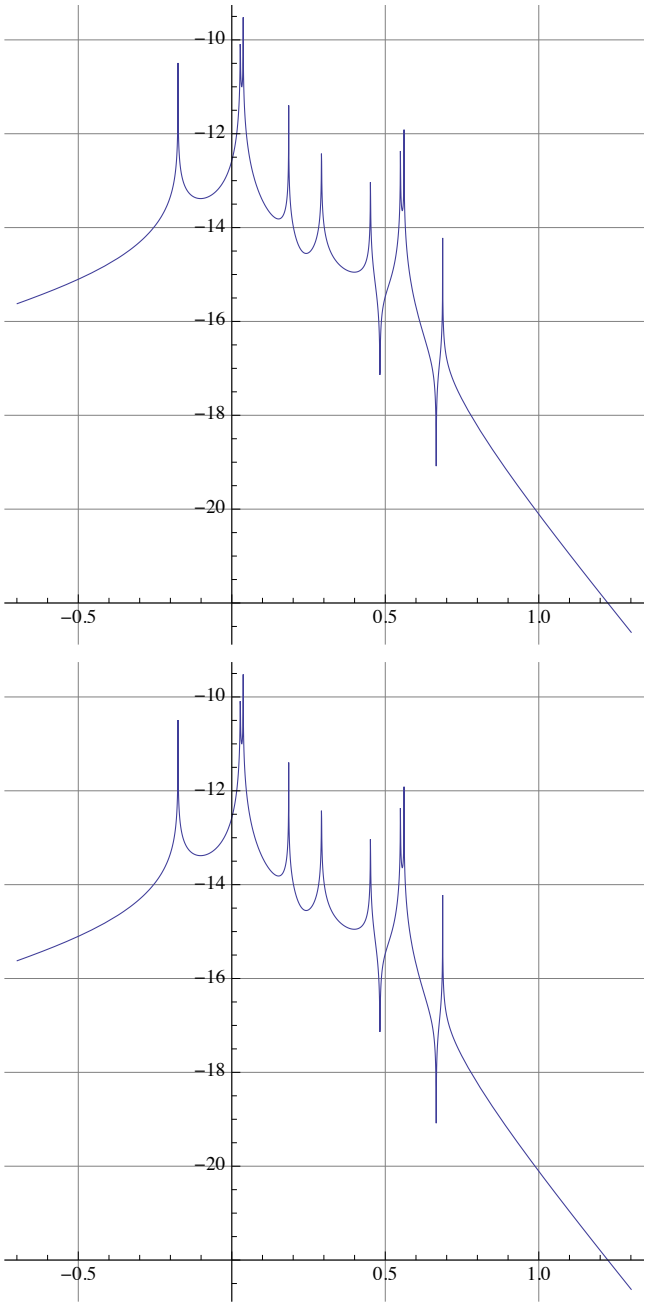
```
plotTFf[eom2,makeinputvector[x0],opticzoutput,0.1,100]
```



x to yaw

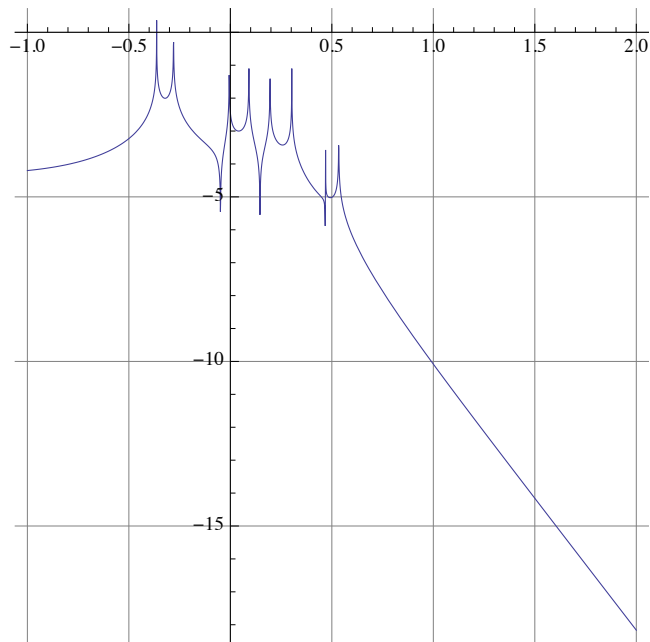
```
plotTFf[eom2,makeinputvector[x0],opticyawoutput,0.1,100]
```





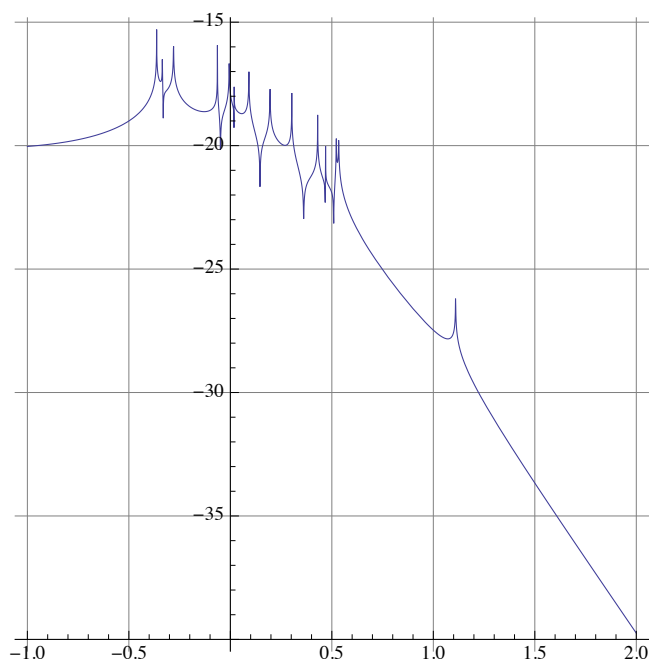
x to pitch

```
plotTFf[eom2,makeinputvector[x0],opticpitchoutput,0.1,100]
```



x to roll

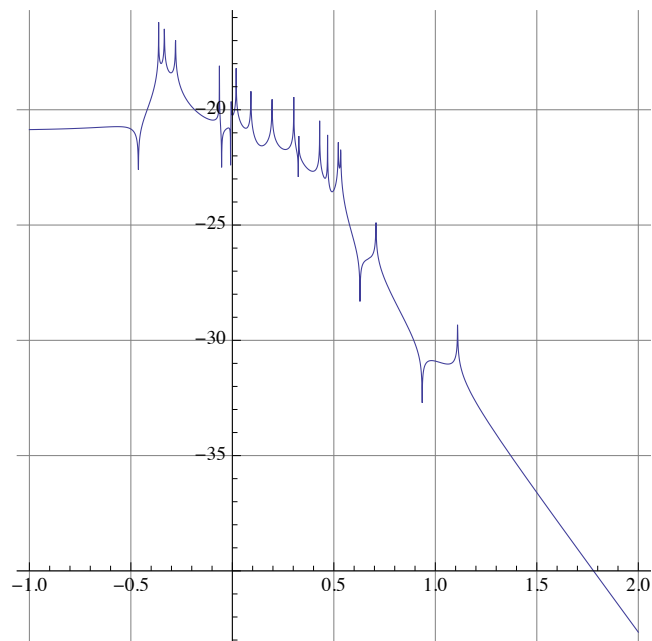
```
plotTFf[eom2,makeinputvector[x0],opticrolloutput,0.1,100]
```



■ y

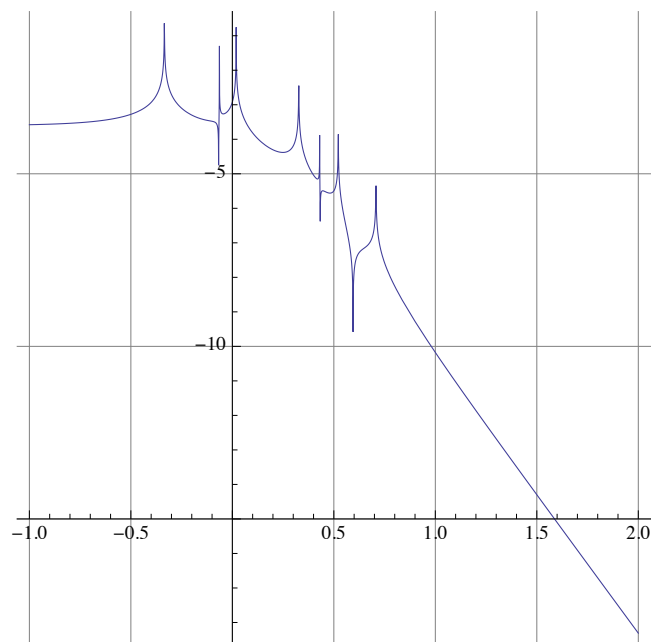
y to x

```
plotTFf[eom2,makeinputvector[y0],opticxoutput,0.1,100]
```



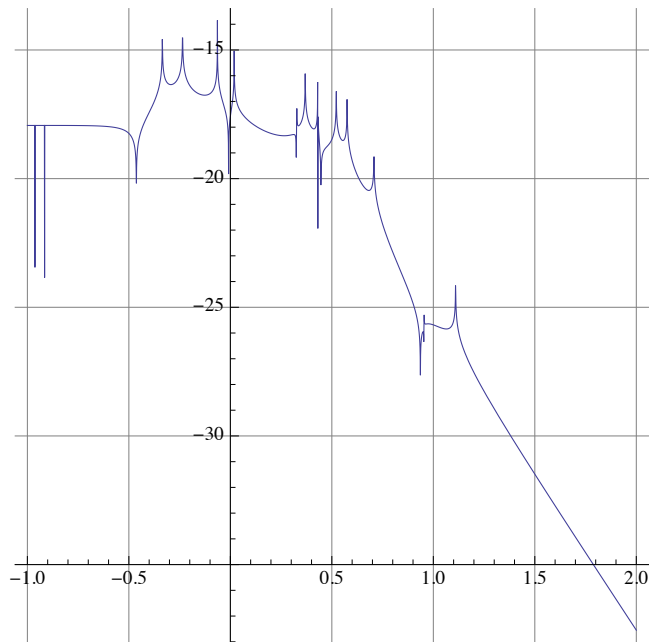
y to y

```
plotTFf[eom2,makeinputvector[y0],opticyoutput,0.1,100]
```



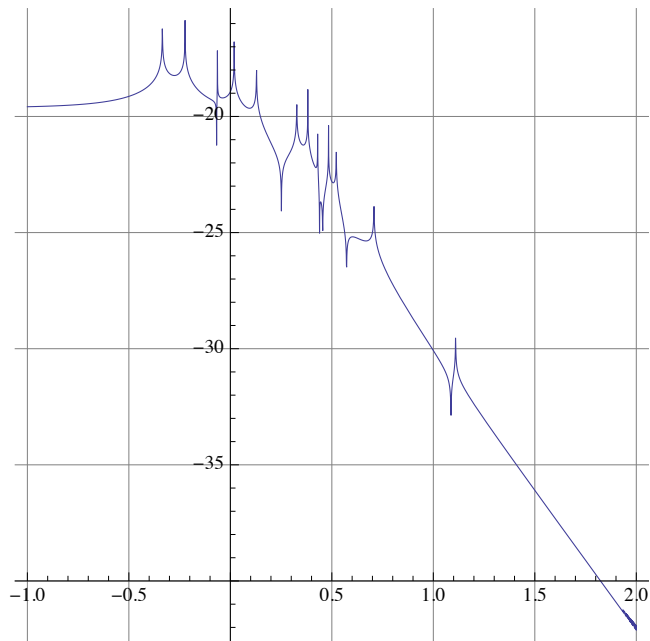
y to z


```
plotTFf[eom2,makeinputvector[y0],opticzoutput,0.1,100]
```



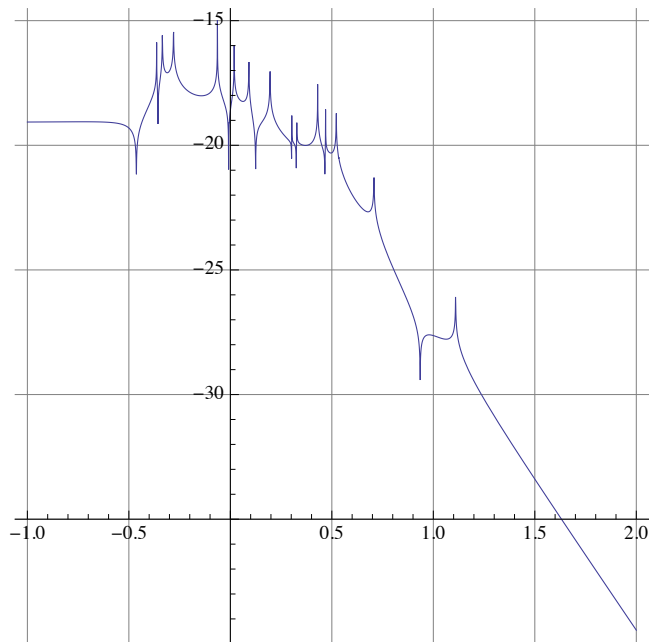
y to yaw

```
plotTFf[eom2,makeinputvector[y0],opticyawoutput,0.1,100]
```



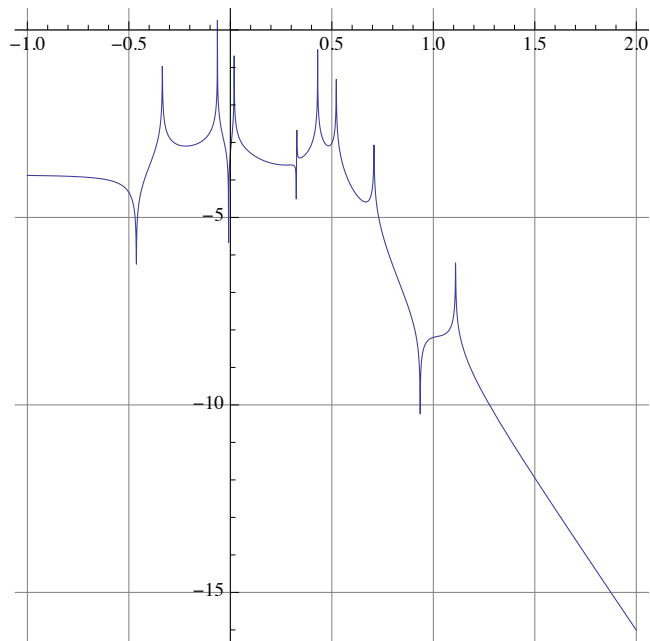
y to pitch

```
plotTFf[eom2,makeinputvector[y0],opticpitchoutput,0.1,100]
```



y to roll

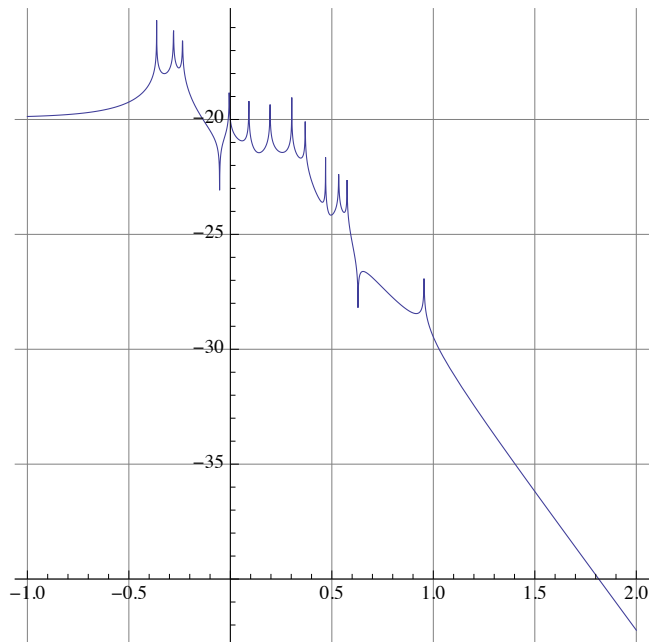
```
plotTFf[eom2,makeinputvector[y0],opticrolloutput,0.1,100]
```



■ z

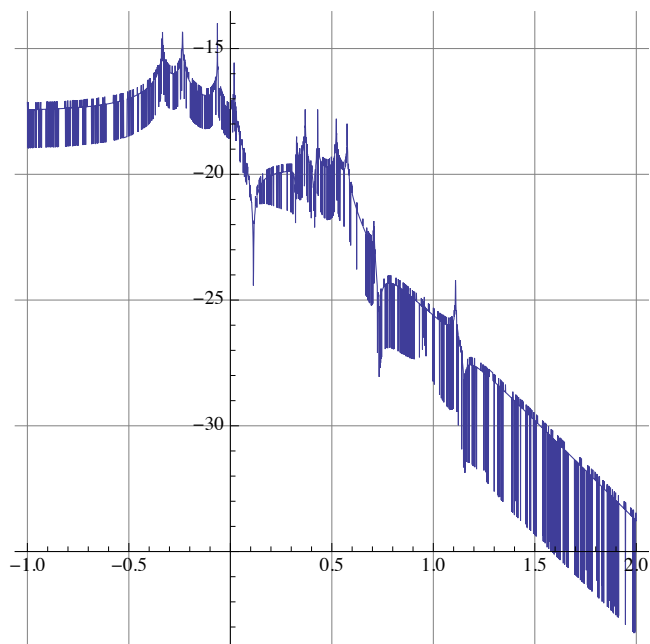
z to x

```
plotTFf[eom2,makeinputvector[z0],opticxoutput,0.1,100]
```



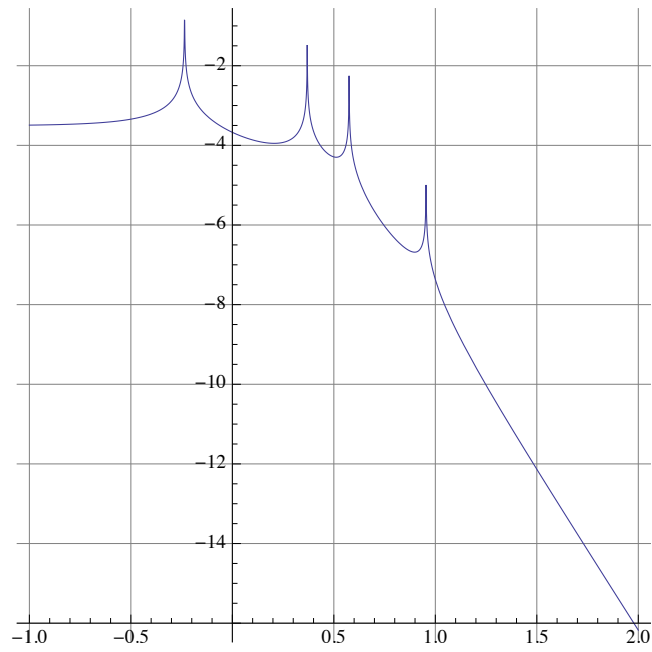
z to y

```
plotTFf[eom2,makeinputvector[z0],opticyoutput,0.1,100]
```



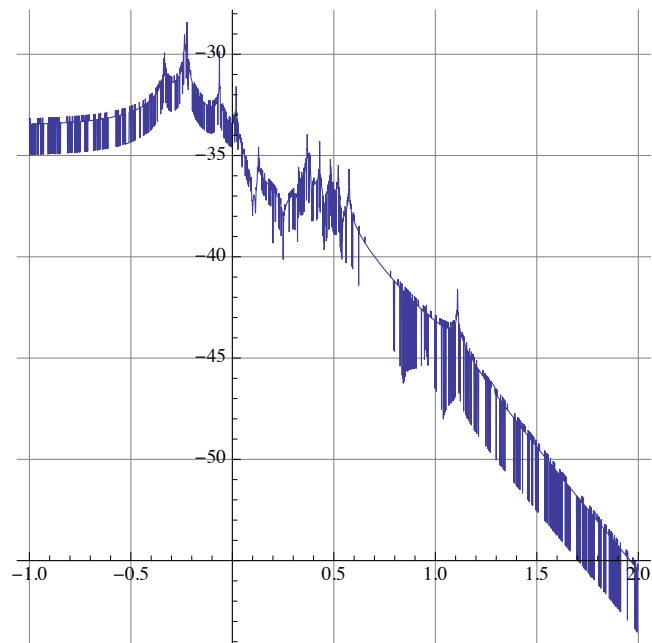
z to z

```
plotTFf[eom2,makeinputvector[z0],opticzoutput,0.1,100]
```



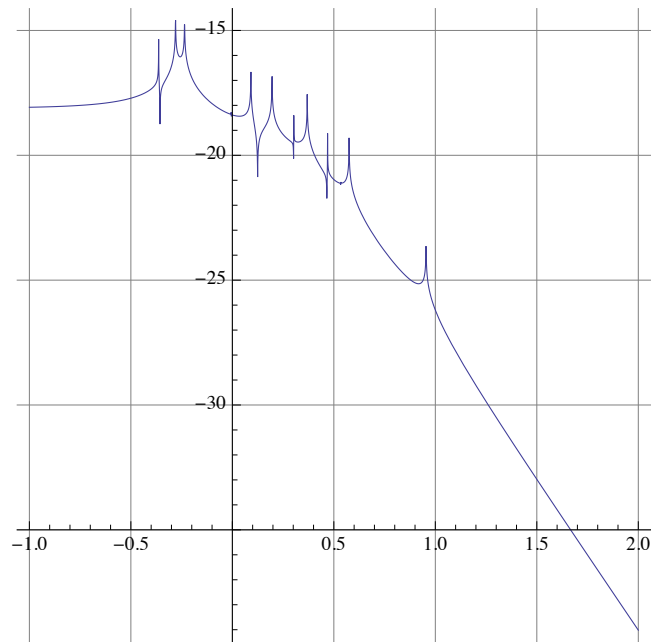
z to yaw

```
plotTFf[eom2,makeinputvector[z0],opticyawoutput,0.1,100]
```



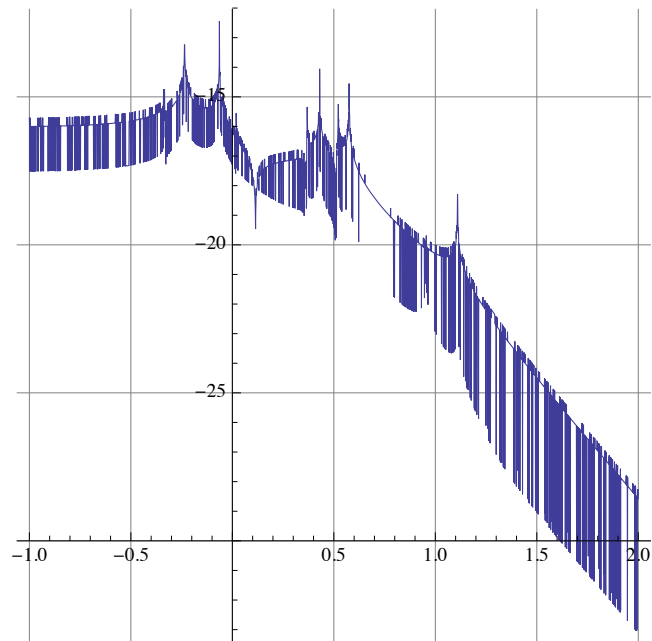
z to pitch

```
plotTFf[eom2,makeinputvector[z0],opticpitchoutput,0.1,100]
```



z to roll

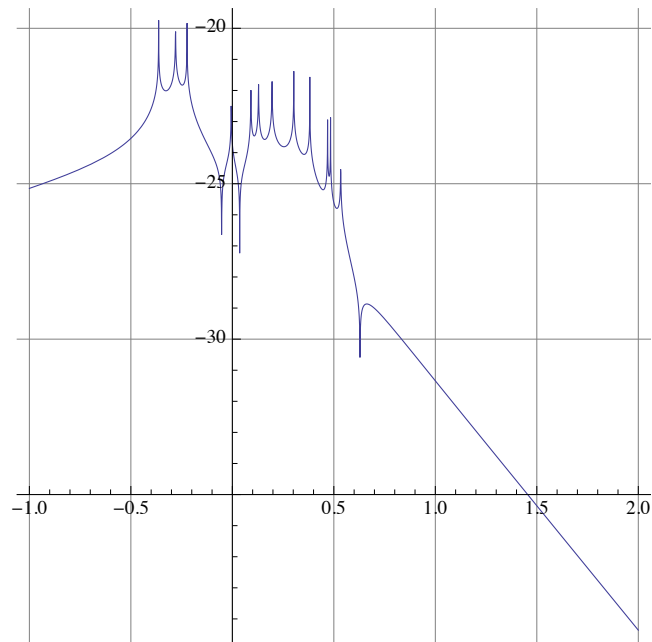
```
plotTFf[eom2,makeinputvector[z0],opticrolloutput,0.1,100]
```



■ yaw

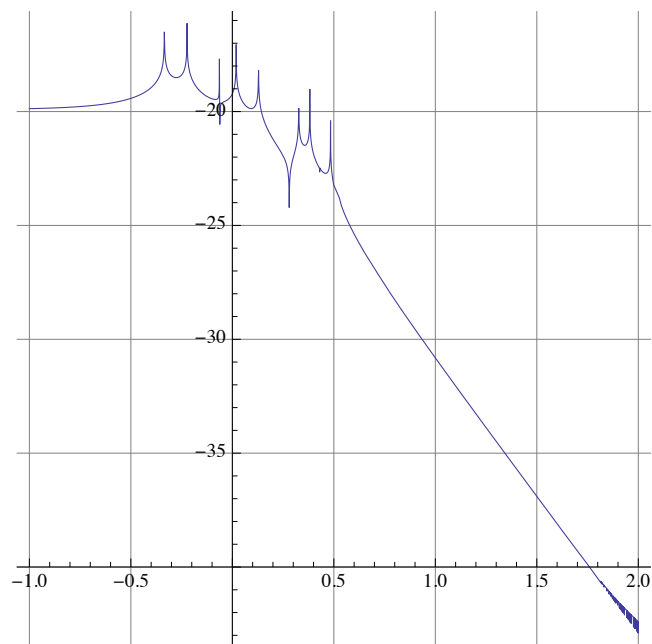
yaw to x

```
plotTFf[eom2,makeinputvector[yaw0],opticxoutput,0.1,100]
```



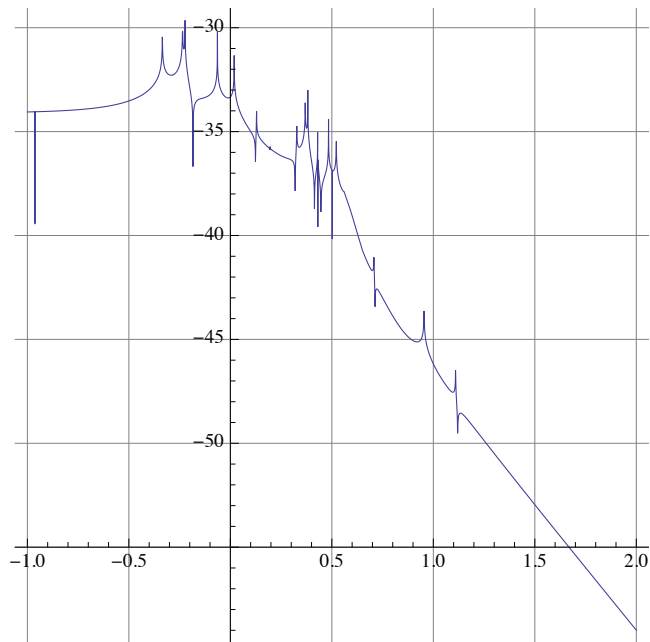
yaw to y

```
plotTFf[eom2,makeinputvector[yaw0],opticyoutput,0.1,100]
```



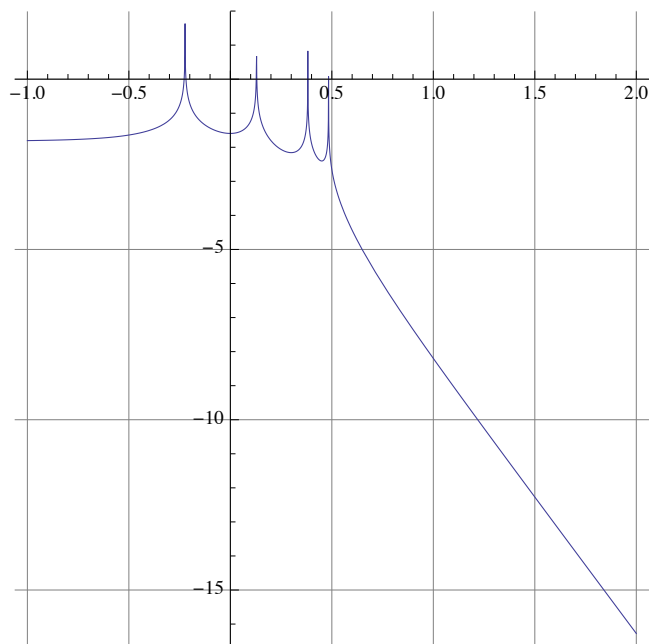
yaw to z

```
plotTFf[eom2,makeinputvector[yaw0],opticzoutput,0.1,100]
```



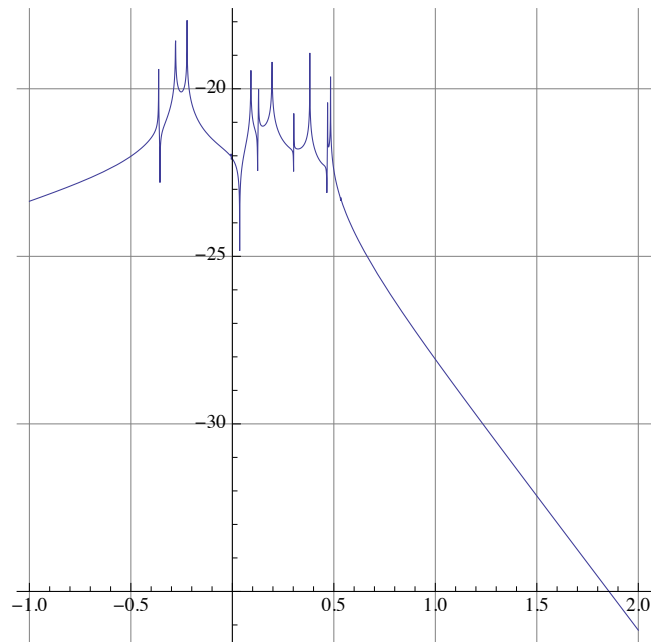
yaw to yaw

```
plotTFf[eom2,makeinputvector[yaw0],opticyawoutput,0.1,100]
```



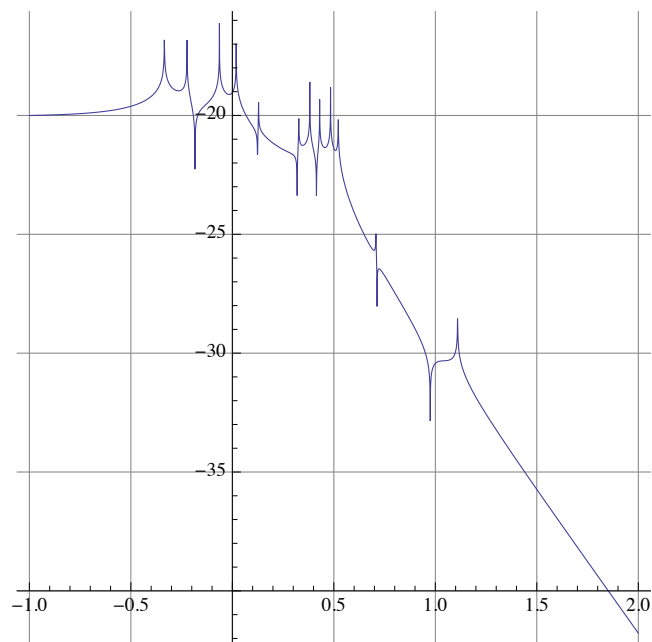
yaw to pitch

```
plotTFf[eom2,makeinputvector[yaw0],opticpitchoutput,0.1,100]
```



yaw to roll

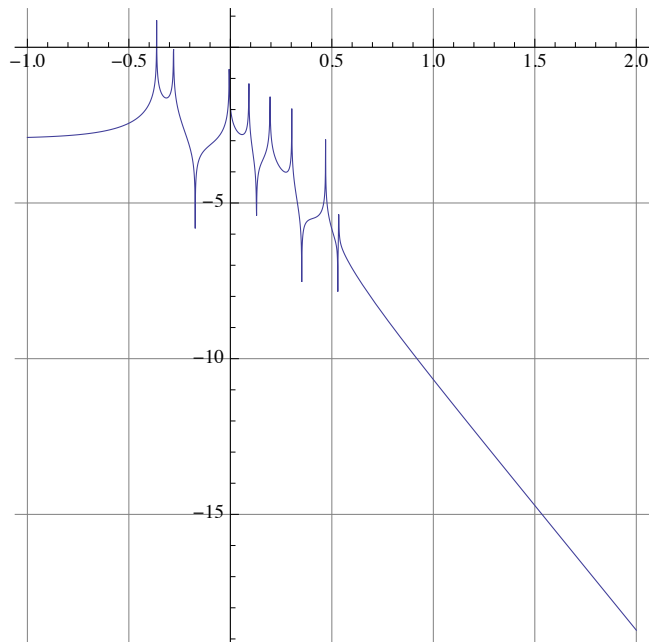
```
plotTFf[eom2,makeinputvector[yaw0],opticrolloutput,0.1,100]
```



■ pitch

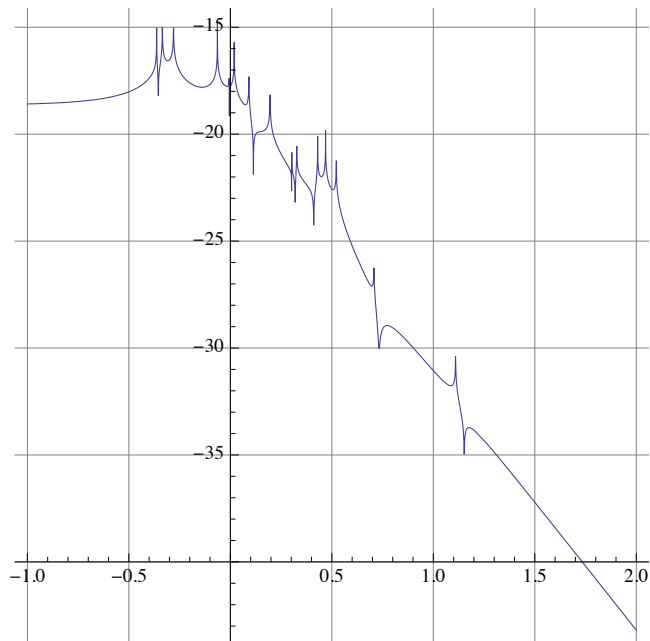
pitch to x


```
plotTFf[eom2,makeinputvector[pitch0],optixoutput,0.1,100]
```



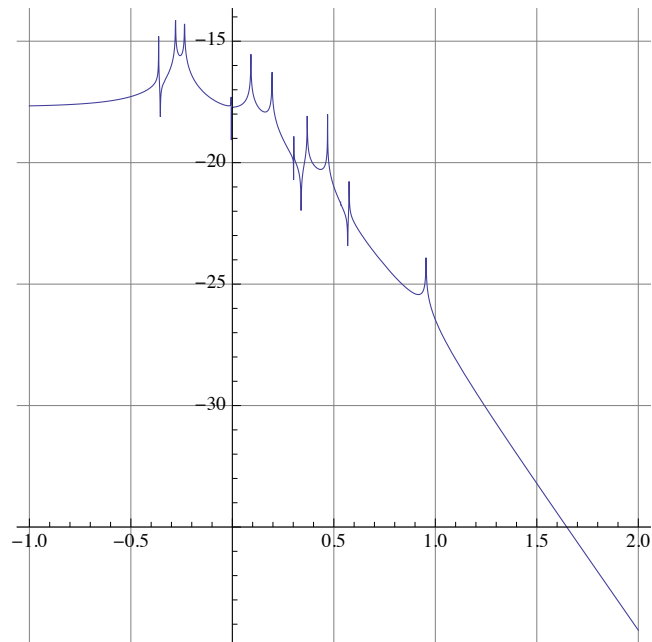
pitch to y

```
plotTFf[eom2,makeinputvector[pitch0],opticyoutput,0.1,100]
```



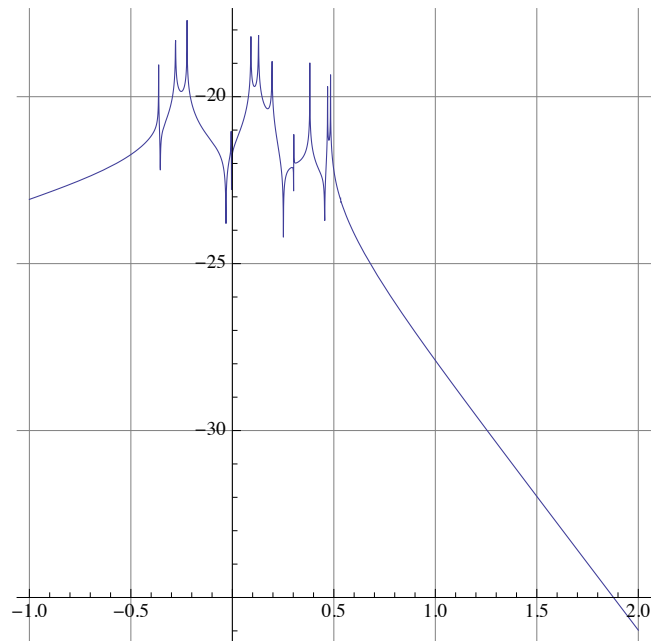
pitch to z

```
plotTFf[eom2,makeinputvector[pitch0],opticzoutput,0.1,100]
```



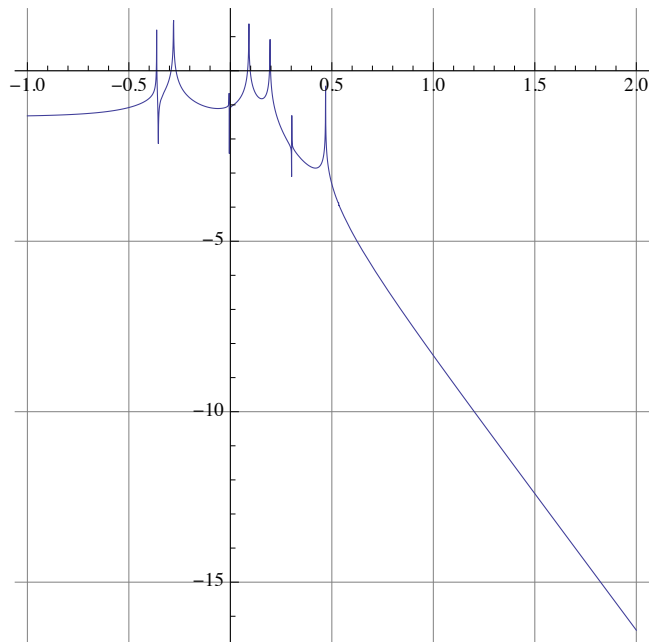
pitch to yaw

```
plotTFf[eom2,makeinputvector[pitch0],opticyawoutput,0.1,100]
```



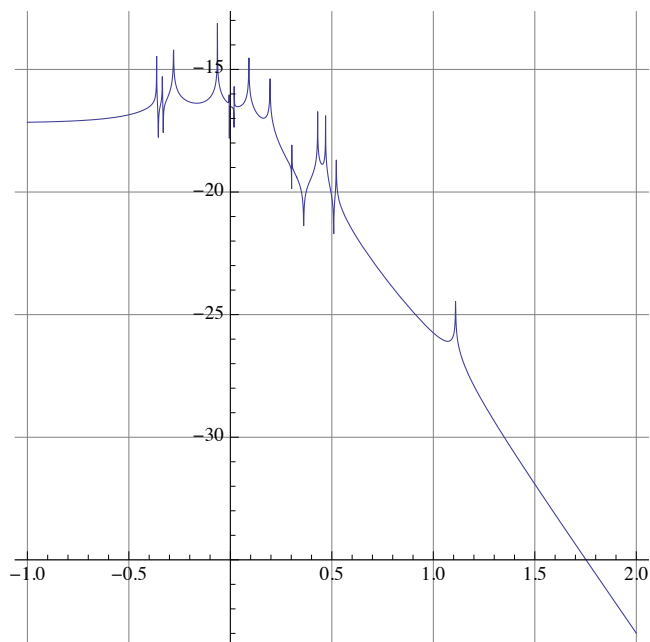
pitch to pitch

```
plotTFf[eom2,makeinputvector[pitch0],opticpitchoutput,0.1,100]
```



pitch to roll

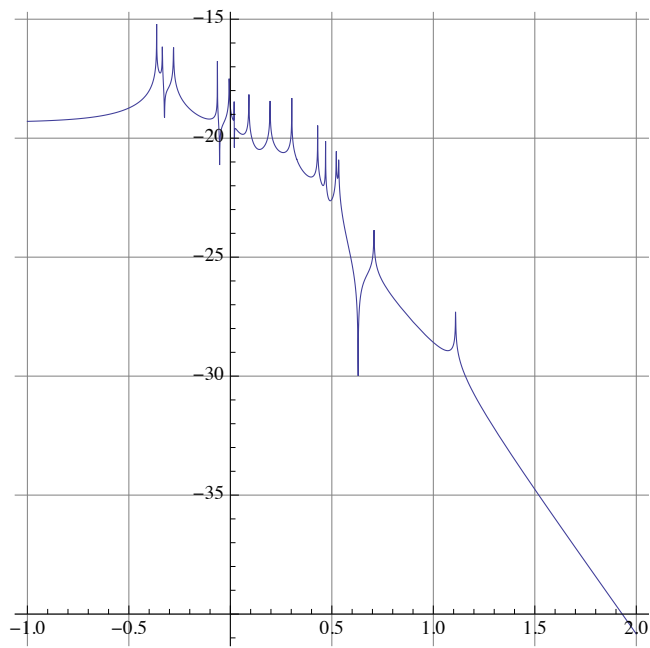
```
plotTFf[eom2,makeinputvector[pitch0],opticrolloutput,0.1,100]
```



■ roll

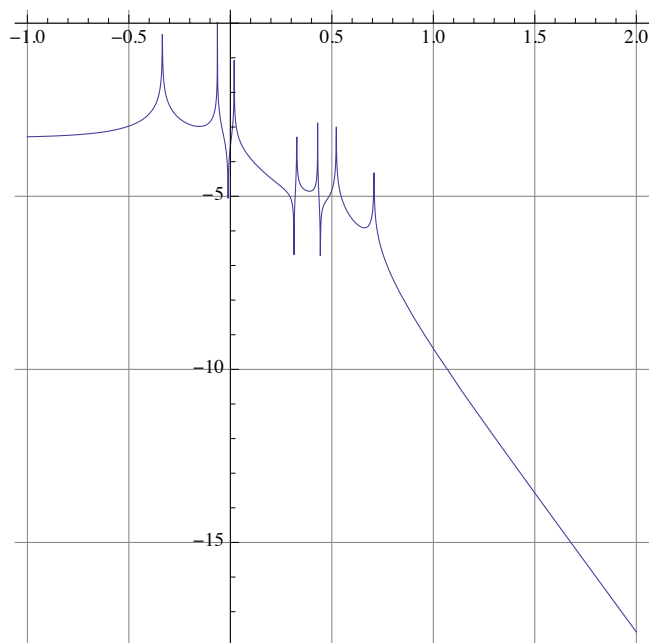
roll to x

```
plotTFf[eom2,makeinputvector[roll10],opticxoutput,0.1,100]
```



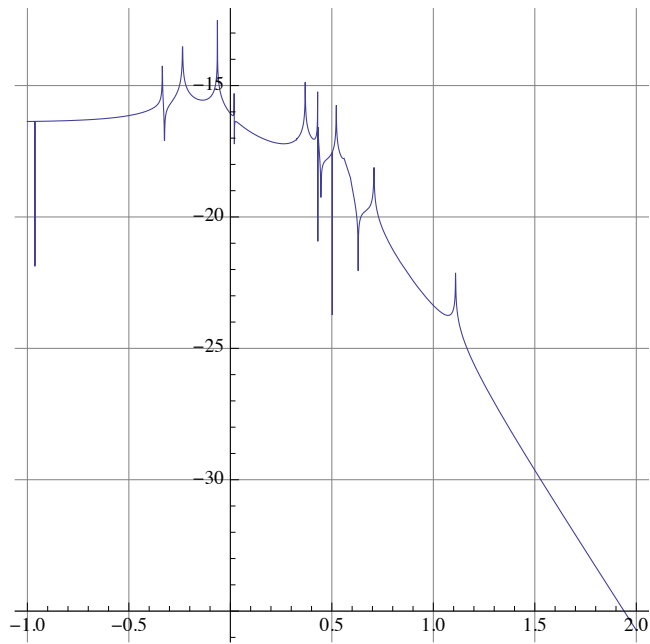
roll to y

```
plotTFf[eom2,makeinputvector[roll10],opticyoutput,0.1,100]
```



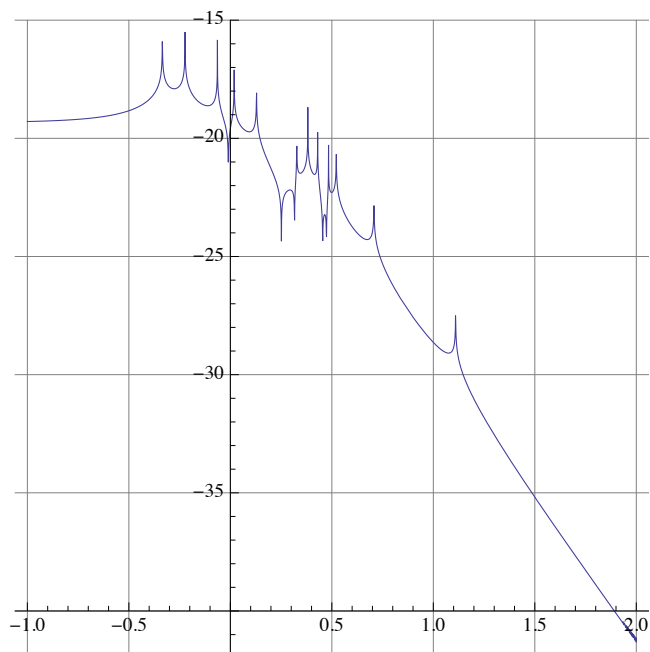
roll to z

```
plotTFf[eom2,makeinputvector[roll0],opticzoutput,0.1,100]
```



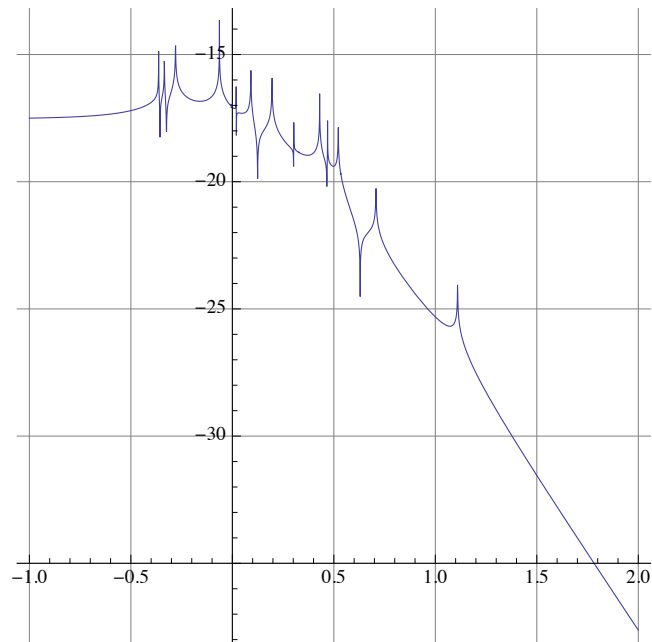
roll to yaw

```
plotTFf[eom2,makeinputvector[roll0],opticyawoutput,0.1,100]
```



roll to pitch

```
plotTFf[eom2,makeinputvector[roll0],opticpitchoutput,0.1,100]
```



roll to roll

```
plotTFf[eom2,makeinputvector[roll0],opticrolloutput,0.1,100]
```

