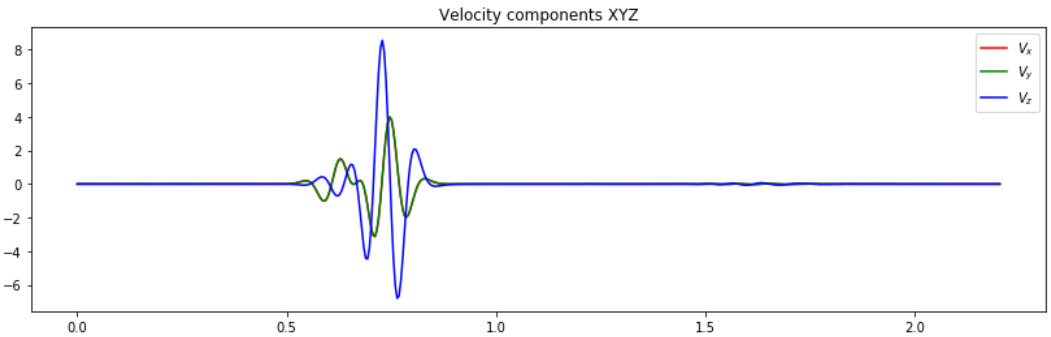
Seismogram's from Shihao's input file

Velocity Components X Y Z

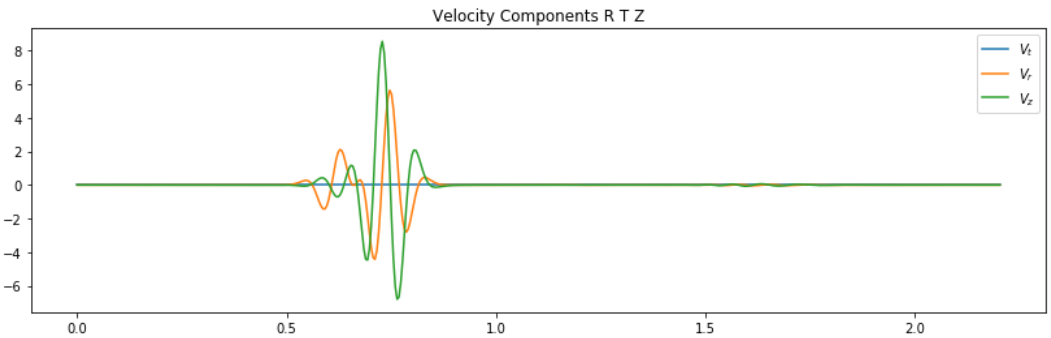
```
0.7853981633974483
```

Out[3]: <matplotlib.legend.Legend at 0x7feff11f4630>



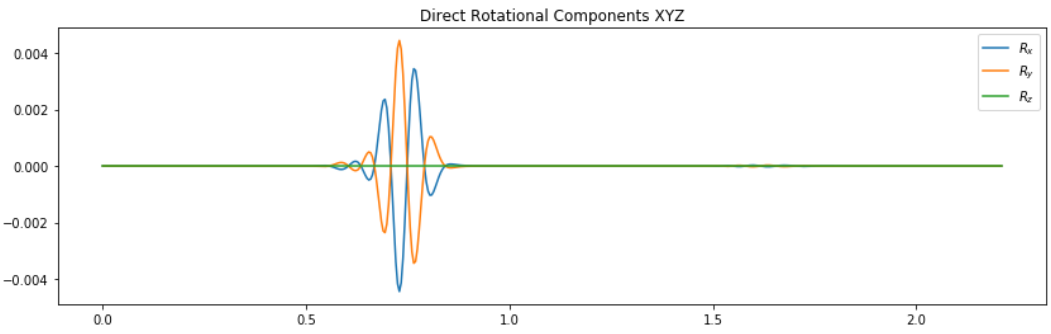
Velocity Components R T Z

Out[4]: <matplotlib.legend.Legend at 0x7feff1121668>



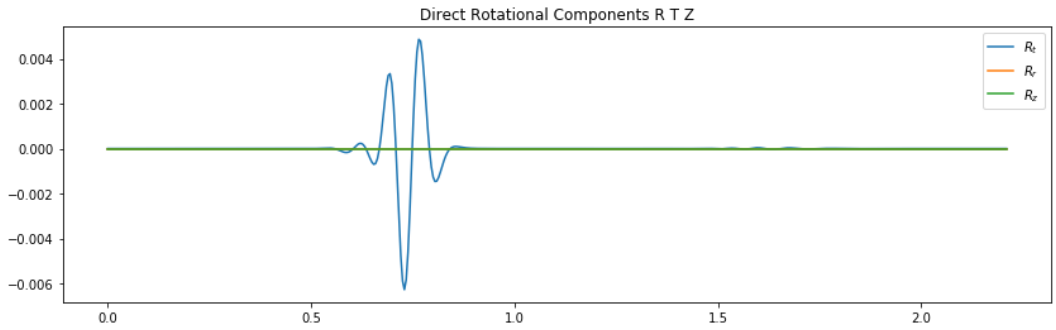
Rotational Components X Y Z

Out[5]: <matplotlib.legend.Legend at 0x7ff01c5e6e10>



Rotational Components R T Z

Out[6]: <matplotlib.legend.Legend at 0x7feff107f908>




```
0.0 0.0
```

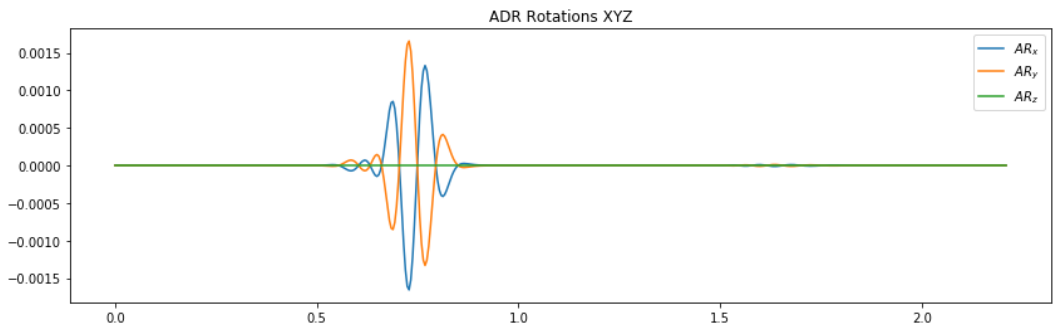
```
/import/freenas-m-04-students/anokhi/anaconda3/lib/python3.6/site-packages
/obspy/signal/array_analysis.py:494: RuntimeWarning: invalid value encount
ered in double_scalars
  ts_m[itime] = misfit_len / sumlen

Rotational rate: ready!

/import/freenas-m-04-students/anokhi/anaconda3/lib/python3.6/site-packages
/obspy/io/mseed/core.py:774: UserWarning: The encoding specified in trace.
stats.mseed.encoding does not match the dtype of the data.
A suitable encoding will be chosen.
  warnings.warn(msg, UserWarning)
/import/freenas-m-04-students/anokhi/anaconda3/lib/python3.6/site-packages
/obspy/io/mseed/core.py:809: UserWarning: File will be written with more t
han one different encodings.
This might have a negative influence on the compatibility with other progr
ams.
  warnings.warn(msg % 'encodings')
```

Array Derived Rotations X Y Z

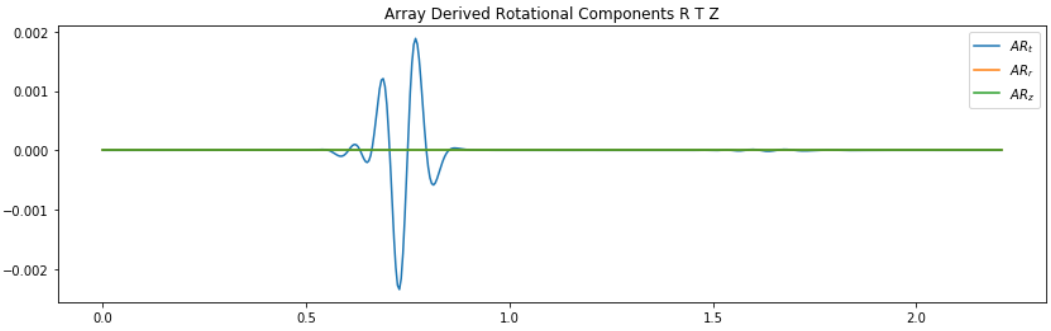
Out[15]: <matplotlib.legend.Legend at 0x7fefed288dd8>



Array Dervied Rotations R T Z

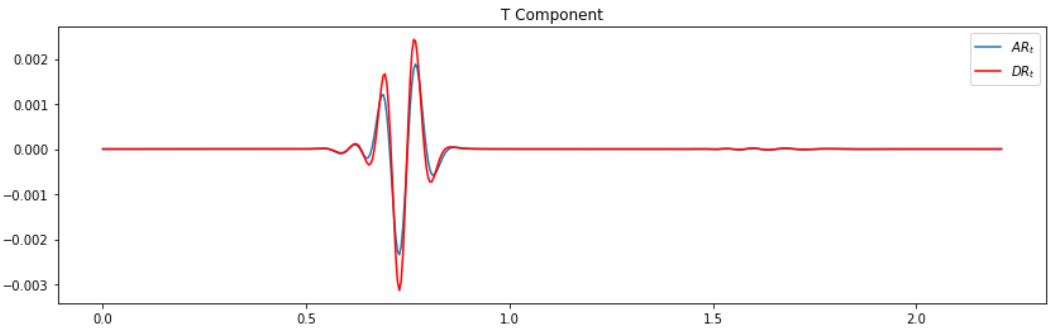
```
0.7853981633974483
```

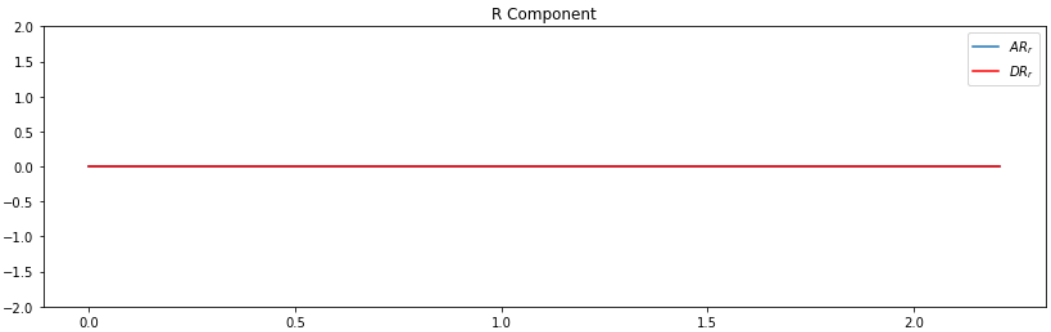
Out[17]: <matplotlib.legend.Legend at 0x7fefed226cf8>

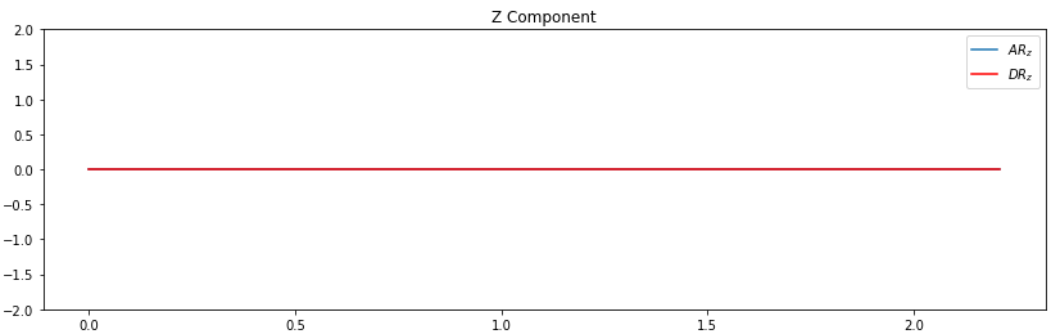


Comparisions- RTZ of ADR and DR

Out[18]: Text(0.5, 1.0, 'Z Component')

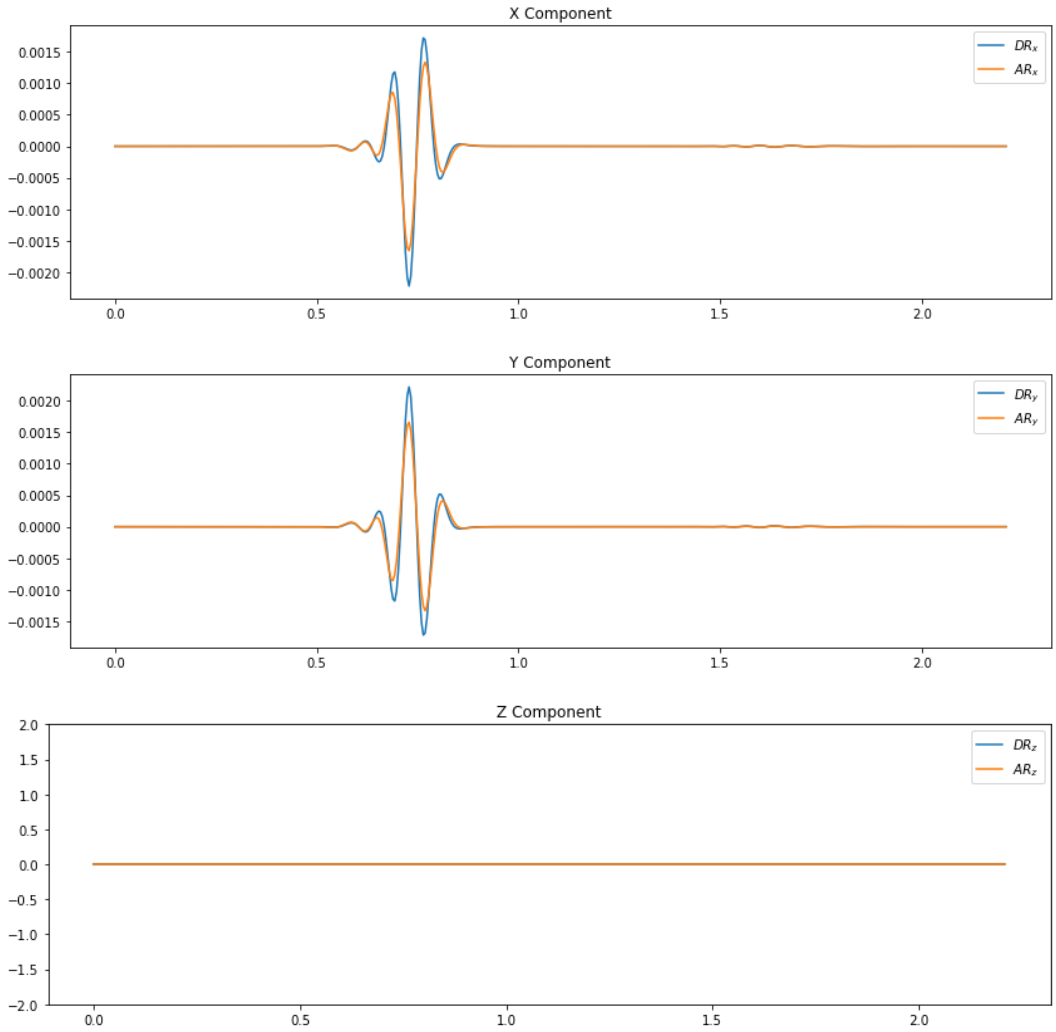






Comparisions- XYZ of ADR and DR

Out[19]: Text(0.5, 1.0, 'Z Component')

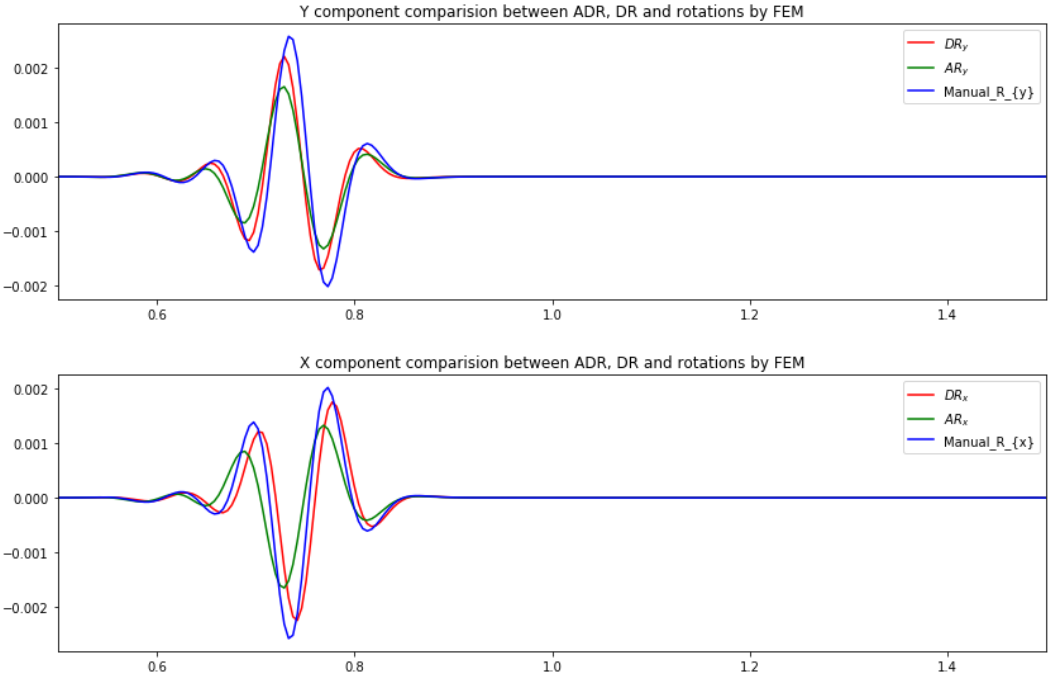


Correlation Coefficient for Each component X Y Z

```
[ 0.97758029]
[ 0.97758029]
[ 0.01613796]
```

Manual Plotting

Out[21]: <matplotlib.legend.Legend at 0x7fefed009c18>



Velocity as derivative of displacement

Slowness Vector using ratio between rotations and velocity components

```
/import/freenas-m-04-students/anokhi/anaconda3/lib/python3.6/site-packages
/ipykernel_launcher.py:5: RuntimeWarning: invalid value encountered in tru
e_divide
  """
/import/freenas-m-04-students/anokhi/anaconda3/lib/python3.6/site-packages
/ipykernel_launcher.py:10: RuntimeWarning: invalid value encountered in tr
ue_divide
  # Remove the CWD from sys.path while we load stuff.
/import/freenas-m-04-students/anokhi/anaconda3/lib/python3.6/site-packages
/ipykernel_launcher.py:15: RuntimeWarning: divide by zero encountered in t
rue_divide
  from ipykernel import kernelapp as app
/import/freenas-m-04-students/anokhi/anaconda3/lib/python3.6/site-packages
/ipykernel_launcher.py:15: RuntimeWarning: invalid value encountered in tr
ue_divide
  from ipykernel import kernelapp as app
/import/freenas-m-04-students/anokhi/anaconda3/lib/python3.6/site-packages
/ipykernel_launcher.py:18: RuntimeWarning: invalid value encountered in tr
ue_divide
/import/freenas-m-04-students/anokhi/anaconda3/lib/python3.6/site-packages
/ipykernel_launcher.py:22: RuntimeWarning: invalid value encountered in tr
ue_divide
/import/freenas-m-04-students/anokhi/anaconda3/lib/python3.6/site-packages
/ipykernel_launcher.py:25: RuntimeWarning: invalid value encountered in tr
ue_divide
```

Out[24]: <matplotlib.legend.Legend at 0x7fefece2a7f0>