Example usage for moment.py

1. Specify parameters to use:

In [6]:

```python
import numpy as np
import moment
```

In [12]:

```python
# Specify variables:
stations_to_calculate_moment_for = ["SKR01", "SKR02", "SKR03", "SKR04", "SKR05",
"SKR06", "SKR07"]
stations_not_to_process = ["SKG08", "SKG09", "SKG10", "SKG11", "SKG12", "SKG13",
"GR01", "GR02", "GR03","GR04","BARD"]
mseed_filename = "data/mseed_data/20140629184210331.m"
instruments_gain_filename = "data/instrument_gain_data.txt" # File with instrume
nt name, instrument gains (Z,N,E) and digitaliser gains (Z,N,E)
NLLoc_event_hyp_filename = "data/NLLoc_data/loc.Tom__RunNLLoc000.20140629.18421
0.grid0.loc.hyp"
MT_six_tensor = np.array([1.,1.,1.,0.,0.,0.]) # Here we specify an explosive sou
rce. For a better approximation, use an actual source inversion result.
density = 917. # Density of medium, in kg/m3
Vp = 3630. # P-wave velocity in m/s
Q = 150. # Quality factor for the medium
verbosity_level = 0 # Verbosity level
```

Run moment calculation:

In [13]:

```python
# Find seismic moment release:
M_0 = moment.calc_moment(mseed_filename, instruments_gain_filename, NLLoc_event_
hyp_filename, stations_to_calculate_moment_for, density, Vp, Q=Q, stations_not_t
o_process=stations_not_to_process, MT_six_tensor=MT_six_tensor, verbosity_level=
verbosity_level)
print("Seismic moment release (Nm):", M_0)

# And find corresponding moment magnitude, M:
M = (np.log10(M_0) - 9.05)/1.5
print("Local moment magnitude, M:", M)
```

```
Seismic moment release (Nm): 4860919.872672323
Local moment magnitude, M: -1.575521025179966
```

In [ ]: