

Konverze formátů v prostředí Matlab - vysosáno ze SEISMONu (autor Stefan Mertl)

1. GSE

Používá funkce v C. Napřed potřeba zkompileovat v Matlabu příkaz:

```
mex mex_gseReadChannel.c gse.c internal.c timeutil.c  
- vytvoří funkci mex_gseReadChannel.mexw32 (nebo mexw64 atd podle plat-  
formy)
```

syntaxe: `[a,b] = mex_gseReadChannel(filename, station, channel, readData)`

příklad: `[a,b]=mex_gseReadChannel('P4066.GSE','HRC','SHE',1);`

2. miniSEED

balíček libmseed, zkompileovat v Matlabu:

```
mex -outdir .. mexMsReadTraces.c fileutils.c matlabExt.c genutils.c  
gswap.c lplatform.c lookup.c msrutils.c pack.c packdata.c tracelist.c  
traceutils.c unpack.c unpackdata.c logging.c selection.c;  
mex -outdir .. mexMsChannelStation.c fileutils.c matlabExt.c genutils.c  
gswap.c lplatform.c lookup.c msrutils.c pack.c packdata.c tracelist.c  
traceutils.c unpack.c unpackdata.c logging.c selection.c;  
mex -outdir .. mexMsReadStation.c fileutils.c matlabExt.c genutils.c  
gswap.c lplatform.c lookup.c msrutils.c pack.c packdata.c tracelist.c  
traceutils.c unpack.c unpackdata.c logging.c selection.c;
```

syntaxe: `data = mexMsReadTraces(filename, reclen, timetol, sampratetol,
dataquality, skipnotdata, dataflag, verbosity)`
`data = mexMsReadChannel(filename, reclen, timetol, sampratetol,
dataquality, skipnotdata, dataflag, verbosity, channel)`
`data = mexMsReadStation(filename, reclen, timetol, sampratetol,
dataquality, skipnotdata, dataflag, verbosity, station, channel, timespanBegin,
timespanEnd)`

popis vstupů:

filename - Name of file to read Mini-SEED data from
reclen - Mini-SEED data record length, -1 for autodetection
timetol - Time tolerance, use -1.0 for 1/2 sample period
sampratetol - Sample rate tolerance, use -1.0 for default tolerance
dataquality - Include data quality in determination of unique time series, use 0
or 1
skipnotdata - Skip blocks in input file that are not Mini-SEED data
dataflag - Flag to control return of data samples or not, 0 or 1
verbosity - Level of diagnostic messages, use 0 - 3
station - Name of the station to load.
channel - Name of the channel to load. Empty string if all should be loaded.
timespanBegin - Begin of the desired timespan [unixseconds].
timespanEnd - End of the desired timespan [unixseconds].

příklady: `MseedData = mexMsReadTraces('KUN040416065000.BHE', 0, -1.0, -1.0, 0, 1, 1, 0);`
`MseedData = mexMsReadChannel('KUN040416065000.BHE', 0, -1.0, -1.0, 0, 1, 1, 0, 'BHE');`
`MseedData = mexMsReadStation('KUN040416065000.BHE', 0, -1.0, -1.0, 0, 1, 1, 0, 'KUN', 'BHE');`
`MseedData = mexMsReadStation('KUN040416065000.BHE', 0, -1.0, -1.0, 0, 1, 1, 0, 'KUN', 'BHE', 1.082098200000000e+009, 1.082102399950000e+009);`

3. SAC

použití: `fid=fopen(filename);`
`mySacHeader = sac_getBinaryHeader(fid);`
`mySacData = sac_getBinaryData(fid);`
`fclose(fid);`

4. SEG Y

syntaxe:

```
SegyFileHeader = segy_getSegyFileHeader(fileId);
SegyTraceHeader = segy_getSegyTraceHeader(fileId, byte_offset, formatRevisionNumber);
[isError, tracedata] = segy_getSegyTraceData(fileId, numberOfSamples,
byteOffset, formatString);
```