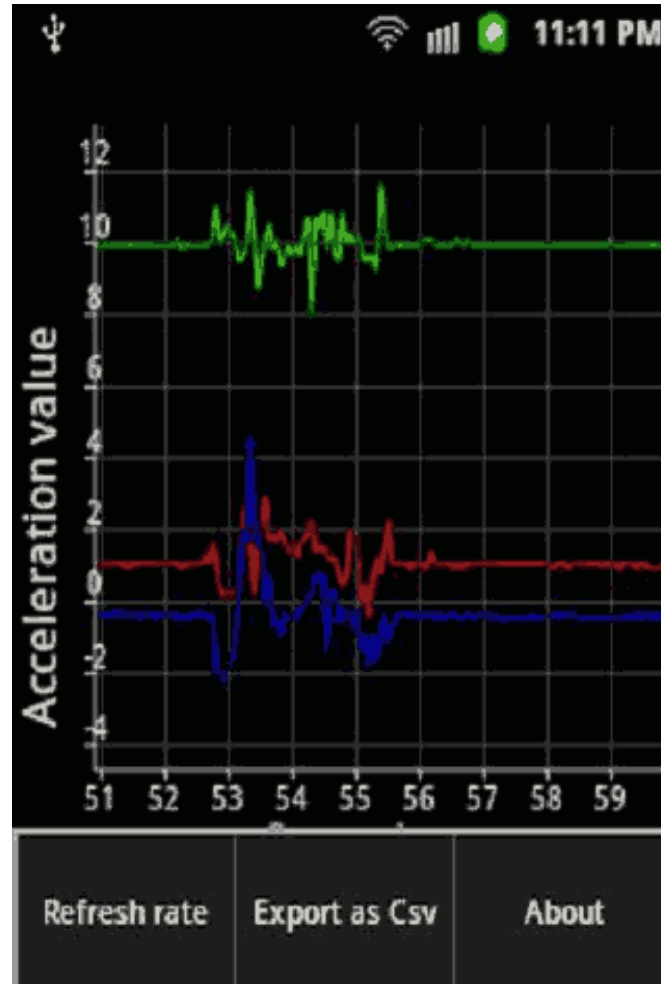


Using the Accelerometer of Your Smart Phone

Stefan Bracher

The App

- Example: Virtuoid Accelerometer data reader for Android



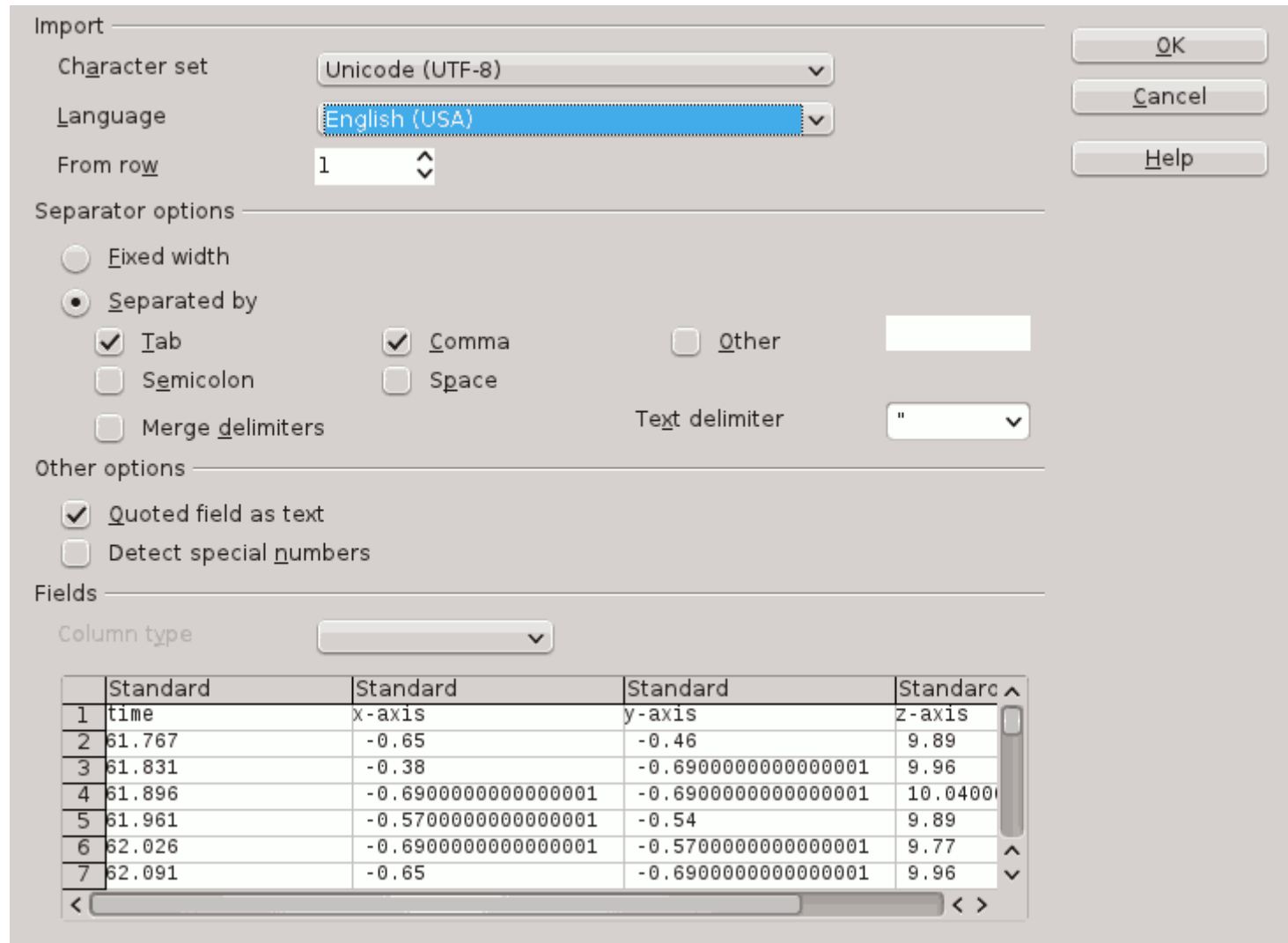
Source: Screenshot Google Play - Virtuoid

CSV

- Text file with data separated by commas, tabs or other characters
- Can be read by any decent spreadsheet software (Example OpenOffice) and calculation programs (Example: Matlab)

CSV

- Example: Import Filter of LibreOffice



Source: Screenshot LibreOffice CSV Import Filter

CSV

Example: LibreOffice

The screenshot shows the LibreOffice Calc interface. The menu bar includes File, Edit, View, Insert, Format, Tools, Data, Window, and Help. The toolbar contains various icons for file operations and editing. The spreadsheet has a grid with columns A through L and rows 1 through 30. The active cell is H16. The data in the spreadsheet is as follows:

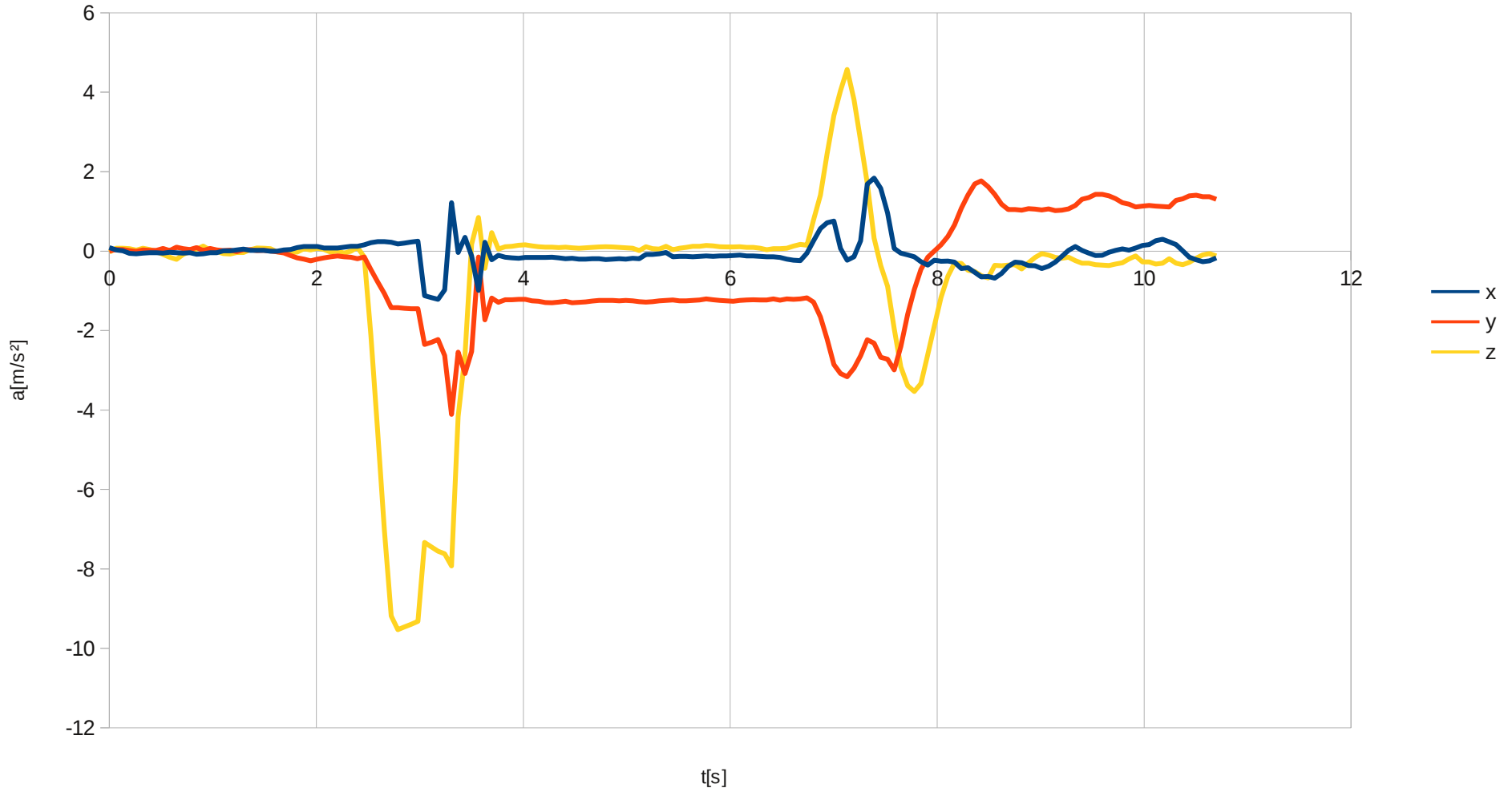
	A	B	C	D	E	F	G	H	I	J	K	L
1	time	x-axis	y-axis	z-axis								
2	61.767	-0.65	-0.46	9.89								
3	61.831	-0.38	-0.69	9.96								
4	61.896	-0.69	-0.69	10.04								
5	61.961	-0.57	-0.54	9.89								
6	62.026	-0.69	-0.57	9.77								
7	62.091	-0.65	-0.69	9.96								
8	62.156	-0.57	-0.54	9.81								
9	62.221	-0.5	-0.61	9.89								
10	62.285	-0.42	-0.73	9.96								
11	62.351	-0.42	-0.61	9.69								
12	62.415	-0.57	-0.69	9.85								
13	62.48	-0.5	-0.61	9.85								
14	62.545	-0.65	-0.69	9.85								
15	62.61	-0.57	-0.54	9.89								
16	62.675	-0.65	-0.57	10.08								
17	62.74	-0.54	-0.46	9.89								
18	62.805	-0.23	-0.61	9.81								
19	62.87	-0.31	-0.57	9.85								
20	62.934	-0.34	-0.73	10								
21	62.999	-0.46	-0.34	9.92								
22	63.064	-0.11	-0.65	9.85								
23	63.129	-0.19	-0.96	9.69								
24	63.193	-0.19	-0.73	9.62								
25	63.259	-0.31	-0.46	9.69								
26	63.324	-0.19	-0.65	9.96								
27	63.388	-0.08	-0.8	9.92								
28	63.453	-0.15	-0.65	9.77								
29	63.518	-0.23	-0.57	9.96								
30	63.583	-0.19	-0.73	10								

Source: Screenshot LibreOffice

Free-Fall

a-t graph

Gravity Corrected Acceleration



0s-2.5s : Holding

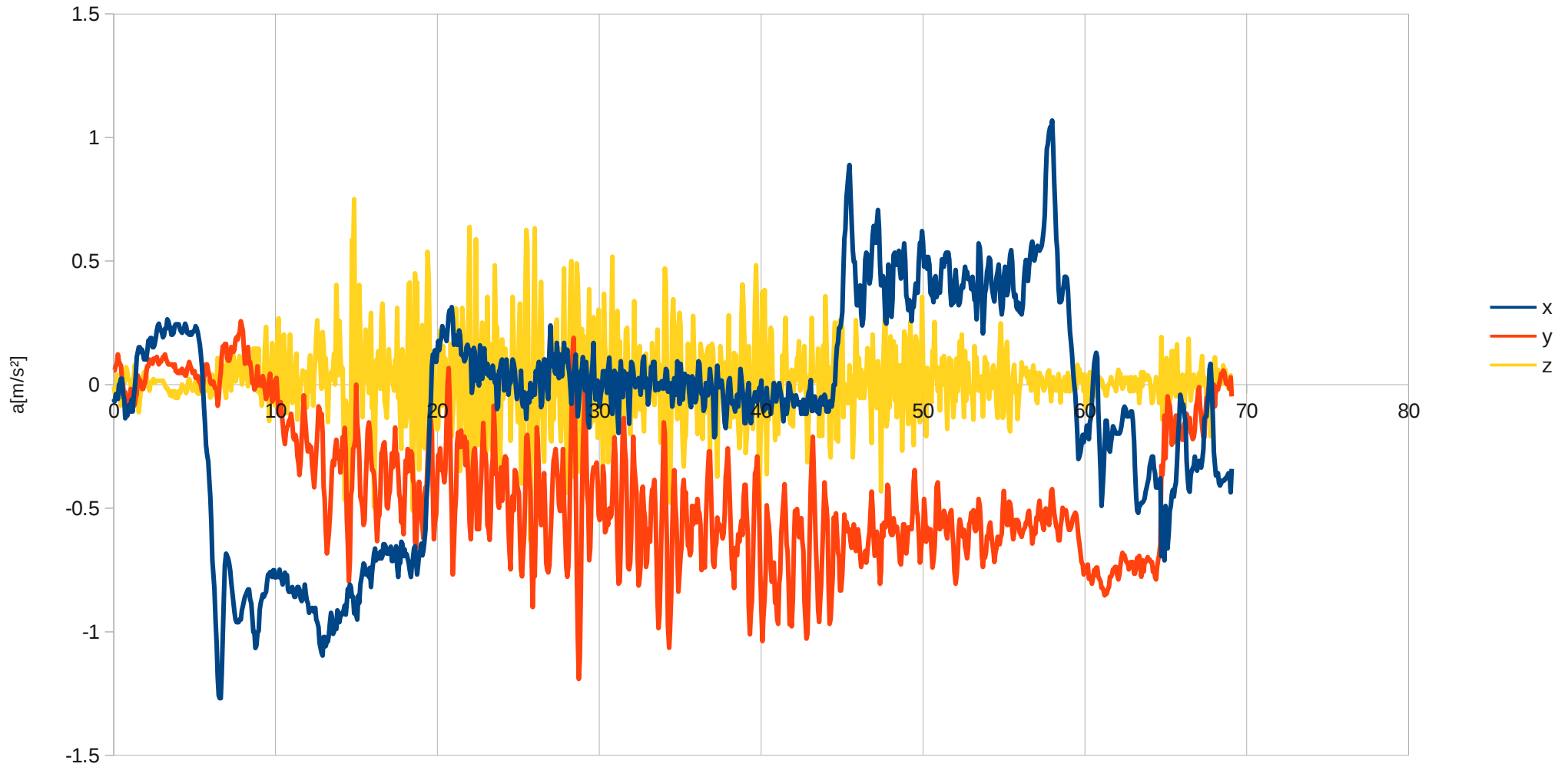
2.5s-3.75s : Freefall (1.5m) and impact (with bouncing)

6.5-8s : Picking up

Metro

a-t graph

Gravity Corrected Acceleration

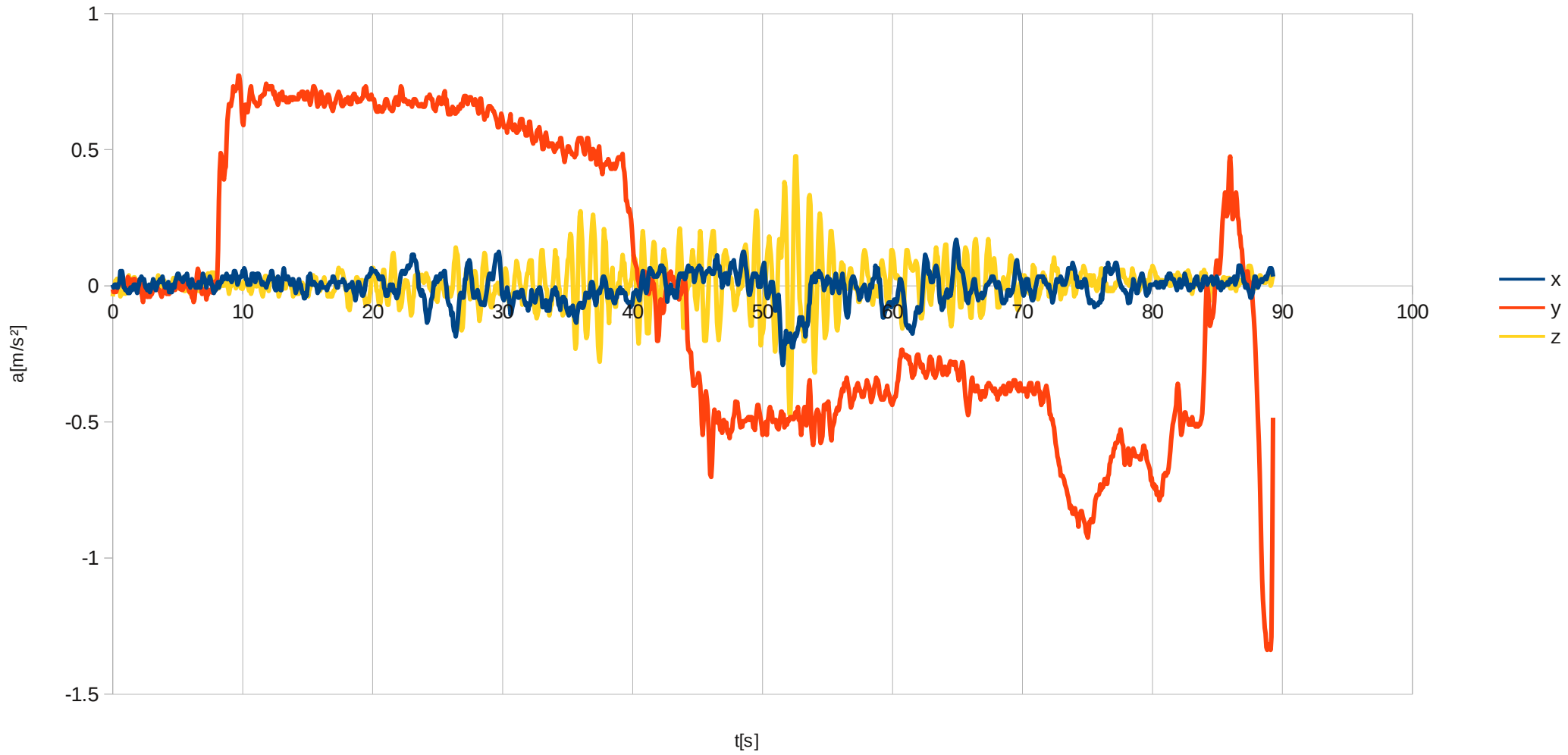


70s Metro Ride from Berry-UQAM to Champs-de-Mars (STM-Montreal, Canada)

Train

a-t graph

Gravity Corrected Acceleration

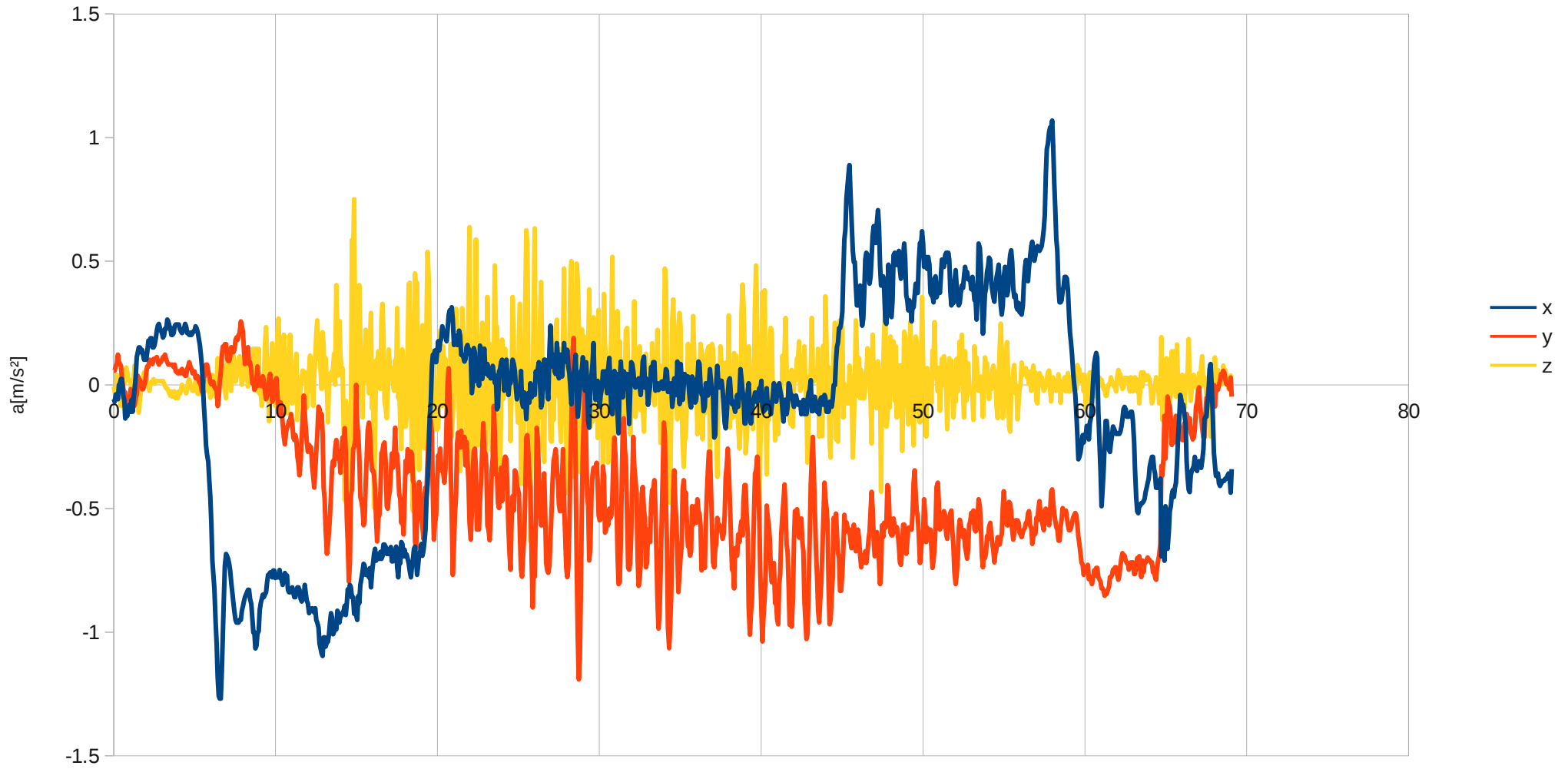


90s Train Raid from Canora to Mont-Royal (AMT – Montreal, Canada)

Metro

a-t graph

Gravity Corrected Acceleration



70s Metro Ride from Berry-UQAM to Champs-de-Mars (Montreal)