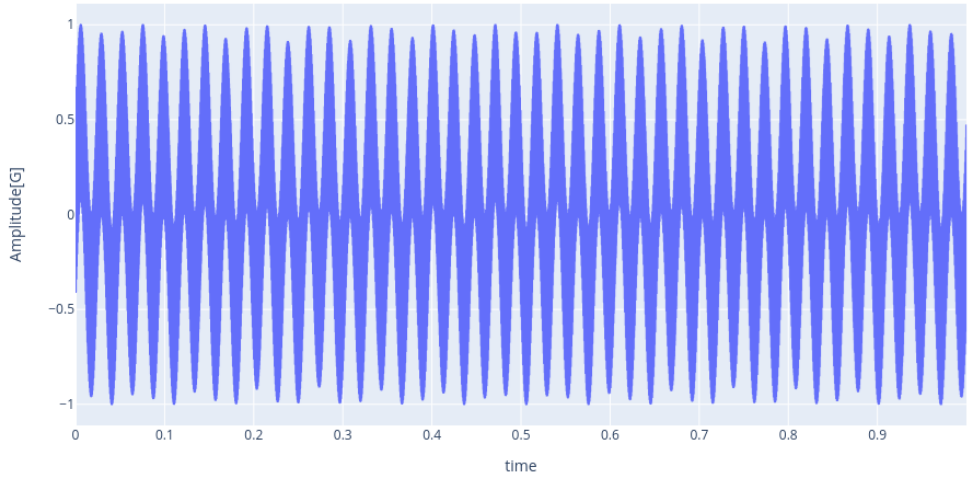
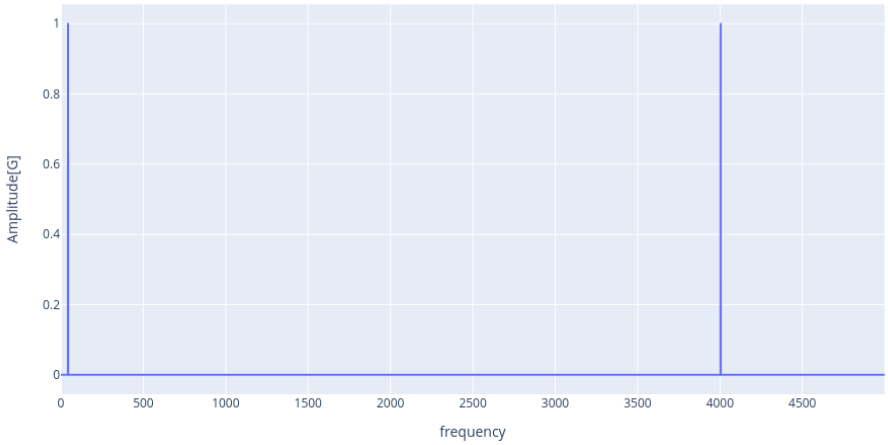
Signal Processing

Below are two graphs of data produced by the vibration test setup that were measured by our vibration sensor.

Graph 1:



Graph 2:



A. **What is the difference between these graphs?**
   Graph 1 shows the signal in Time Domain, whereas graph 2 shows the signal in Frequency Domain.
B. **What would you do to determine if these are from the same data set?**
   I'd say that the signal have 2 frequency components, first one being near 0 Hz, second being at 4 kHz, the frequency near 0 Hz (can be calculated to about 45 Hz) is either a byproduct of the sensor measuring hardware or the vibrator resonance.
C. **What can you learn about the measured vibration from the second graph that you can't from the first one?**
   In the 2nd graph I can learn that the measured frequency is 4 kHz, I can learn if there's any noise at the system and infer required filtering needed.