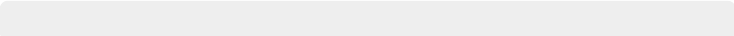


VIB2019-Signal-Processing

Number of participants: 0

1

The discrete Fourier transform applies to

any type of signal		0%	0 votes
only random signals		0%	0 votes
✓ only periodic signals		0%	0 votes

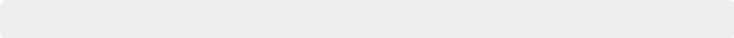
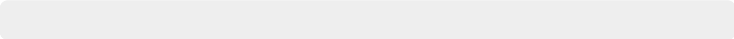

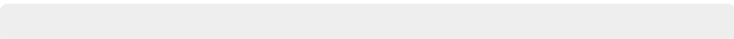
2

The continuous Fourier transform applies to

✓ any type of signal	<input type="checkbox"/>	0%	0 votes
periodic signals only	<input type="checkbox"/>	0%	0 votes
harmonic signals only	<input type="checkbox"/>	0%	0 votes
it depends on the type of excitation of the system	<input type="checkbox"/>	0%	0 votes


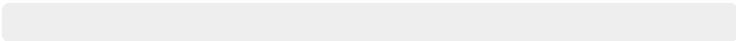
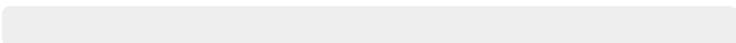
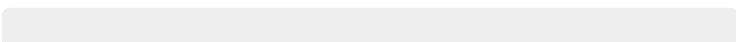
3

The continuous Fourier transform of a rectangle (pulse) is

a cosine function		0%	0 votes
a sine function		0%	0 votes
✓ a sinc function		0%	0 votes
a complex function which cannot be computed analytically		0%	0 votes

4

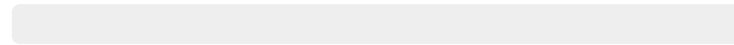
Convolution in the time domain corresponds to

✓ multiplication in the frequency domain		0%	0 votes
convolution in the frequency domain		0%	0 votes
deconvolution in the frequency domain		0%	0 votes
division in the frequency domain		0%	0 votes

5

Aliasing happens when

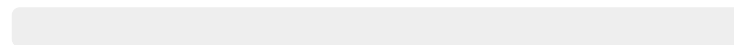
The sampling frequency is too high with respect to the frequency content of the signal



0%

0 votes

✓ The sampling frequency is too low with respect to the frequency content of the signal



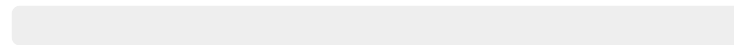
0%

0 votes

6

When using Fast Fourier Transform on sampled signals, you can increase the frequency resolution by

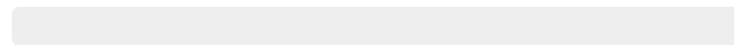
decreasing the time step of the sampling signal, keeping the total measurement time constant



0%

0 votes

increasing the time step of the sampling signal, keeping the total measurement time constant



0%

0 votes

✓ increasing the measurement time,



0%

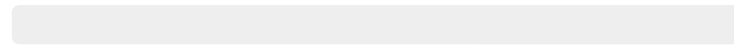
0 votes

whatever the time step
of the sampling signal

7

When using FFT, the time step of the sample signal has an influence on

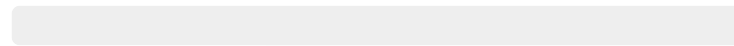
The frequency resolution of the FFT



0%

0 votes

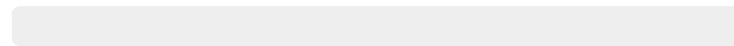
✓ The maximum frequency of the FFT



0%

0 votes

It has no influence on the FFT



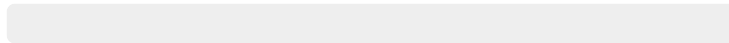
0%

0 votes

8

Suppose the sampling frequency of the accelerometer on your smartphone is 200 Hz. Up to what frequency can you measure acceleration signals ?

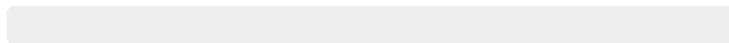
200 Hz



0%

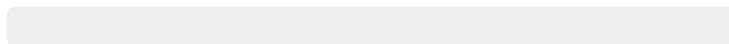
0 votes

✓ 100 Hz



0%

0 votes

It depends on the length
of the measurement

0%

0 votes