

## Report of Exercise 2

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**What is the output size of y? (0.1 pt)?**

Ans: the size of it is 20025, the shape of it is (25, 801).

**How is the number of bands visible here (0.1pt)?**

Ans: 25 bands are visible here.

**What is the sampling rate of signals in y in each band (0.1 pt)?**

Ans:  $fs/25=441.0$

**How many samples there are in the original signal "x" and how many samples in "y" (0.1 pt)**

Ans: There are 19960 samples in the "x\_org", 20009 samples in the "x" and there are 20025 samples in the "y" where we can see from the variable explorer.

**What is this summation doing?**

Ans: it sums all the columns of x\_rec (size of it is  $25 \times 20009$ ) so that we could reconstruct the signal.

**What is the amount of data, i.e., how many samples are in the STFT domain (0.1 pt)?**

Ans: 20224 where we can easily see from the variable explorer.

**Does the amount of data increase in the STFT domain versus time-domain (0.1 pt)?**

Ans: Yes, it increases. As is shown in the time domain, the size is 20009, and in the STFT domain, it is 20224.

**What is the amount of data in the original signal (0.1 pt)?**

Ans: 19960 samples

**What can you find from the two reconstructed signals (0.2 pt)?**

Ans: in the first figure, it is perfectly reconstructed and in the second one, it is not that perfect.