Practice of Basic Informatics - Homework 8

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1 Graphic 1

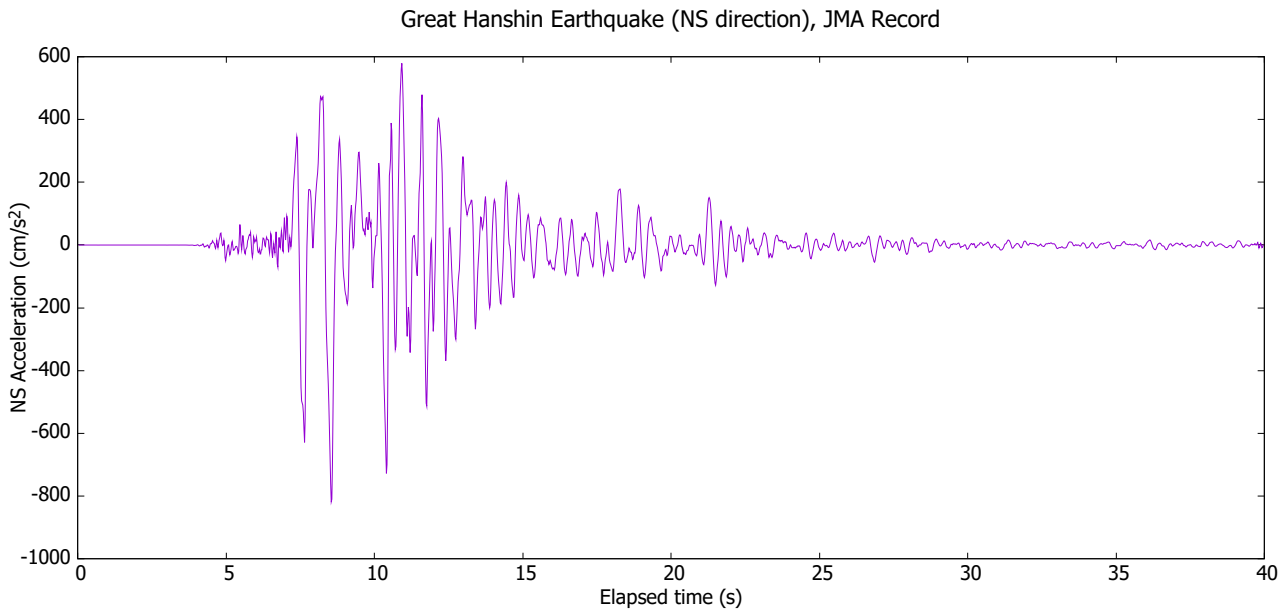

Figure 1: North-south seismic wave (recorded acceleration) observed in the Kobe Marine Observatory, due to the Hyogo Prefecture earthquake of 1995.

2 Graphic 2

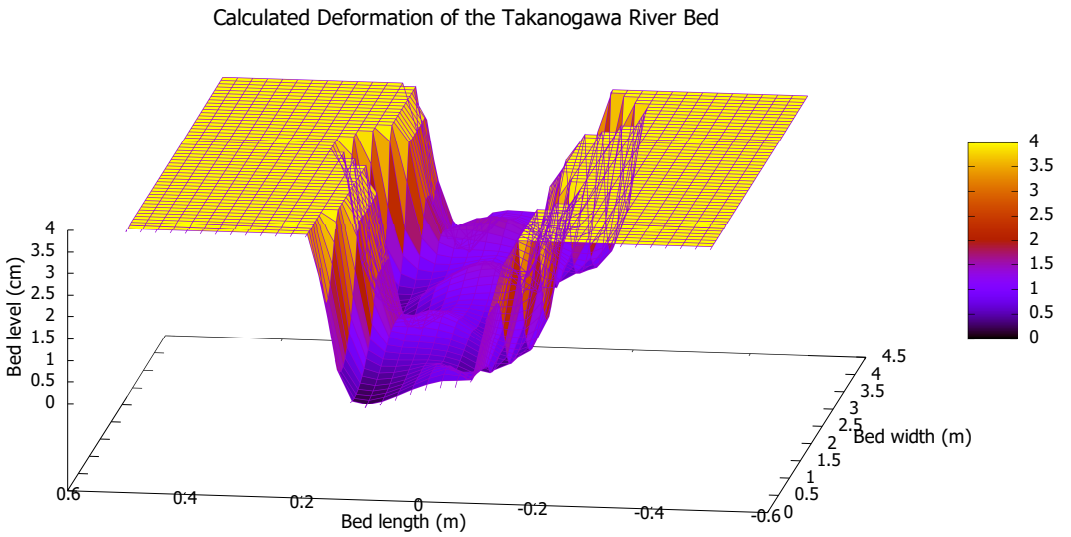

Figure 2: A numerical simulation of the development of river sandbars and meanders

3 Graphic 3

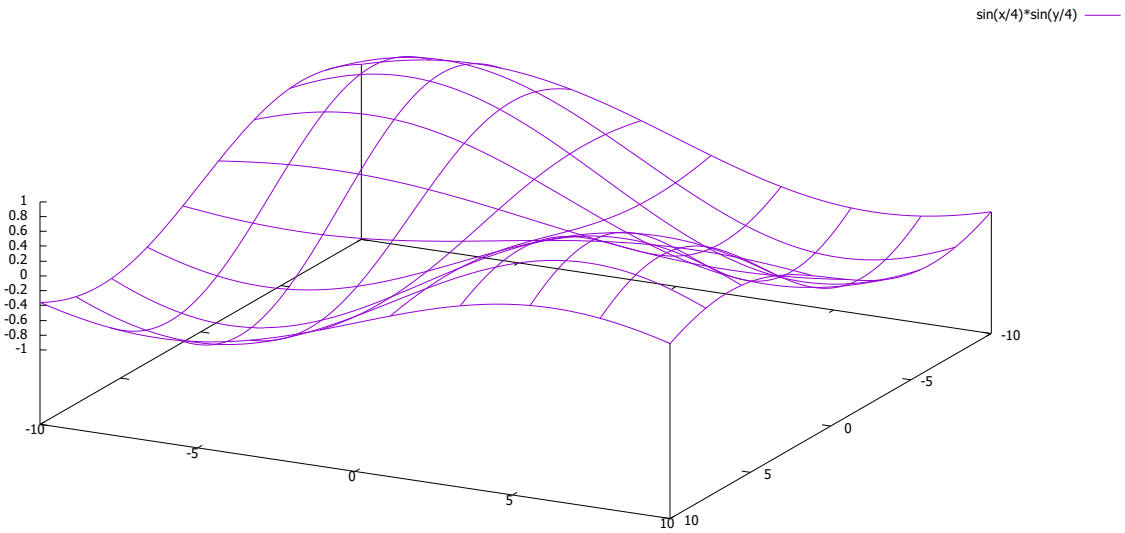

Figure 3: A 2D Standing Wave Patterns

The general form of standing wave in two dimensions is:

$$\psi(x,y)_{n_x,n_y} = A_{n_x,n_y} \sin\left(\frac{n_x \pi x}{L_H}\right) \sin\left(\frac{n_y \pi y}{L_V}\right)$$

where n_x and n_y characterize the normal mode of the wave on the boundary of L_H and L_V. In the graph above, $n_x = n_y = 5$ and $L_H = L_V = 20$.

4 Creating Graphics with Gnuplot

4.1 What I have learned today

- Using Gnuplot for plotting.
- Import the plot with extension pdf to tex file.
- Display it approriately.

4.2 Difficult points

- As I am using Ubuntu simulated on VirtualBox, I have to install latex and gnuplot from scratch. Everything is working fine except I could not render eps file with latex.
- To make the font bigger, I am manually setting each component's font to be bigger, which is not very efficient.