Your Title

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Abstract

Abstract, should normally be not longer than 200 words

1 Introduction

Intention of this programm is to caculate the wave field which is generated by a given confiugration $\{\vec{x_i}_i | i = 1..N\}$ of oscillators which are generating spherical waves

$$\psi(r,t) = \frac{1}{r} sin(2\pi \frac{r + ct}{\lambda}) \tag{1}$$

where c denotes the speed of propagation and λ the wave length. The figure 1shows the propergation of the wave described by equation 1 in the x/y plane. The intensity is drawn rectangular on the x/y plane.

The wave field at a given point $\vec{x}$ is given by the superposition of all waves described by equation 1 which yields

$$\psi_{total}(\vec{x},t) = \sum_{i=1}^{N} \psi(\parallel \vec{x_i} - \vec{x} \parallel, t) \tag{2}$$

1.1 Subsection

Lets assume the oscillators beeing distributed along the X axis in equidistant step D; which leads for $t = 0$ to the following pictures

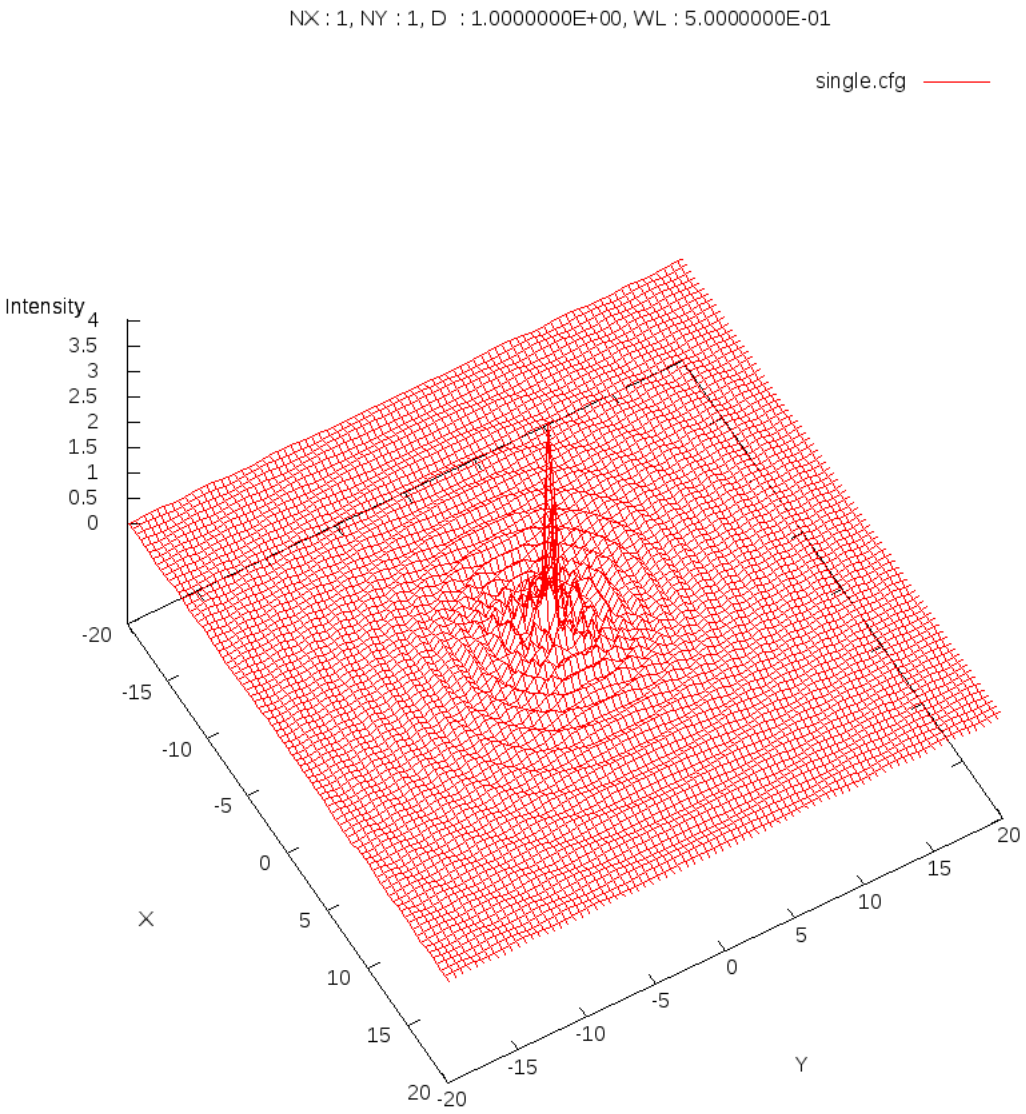

Figure 1: This figure shows the wave field for a single projected on the x/y plane.

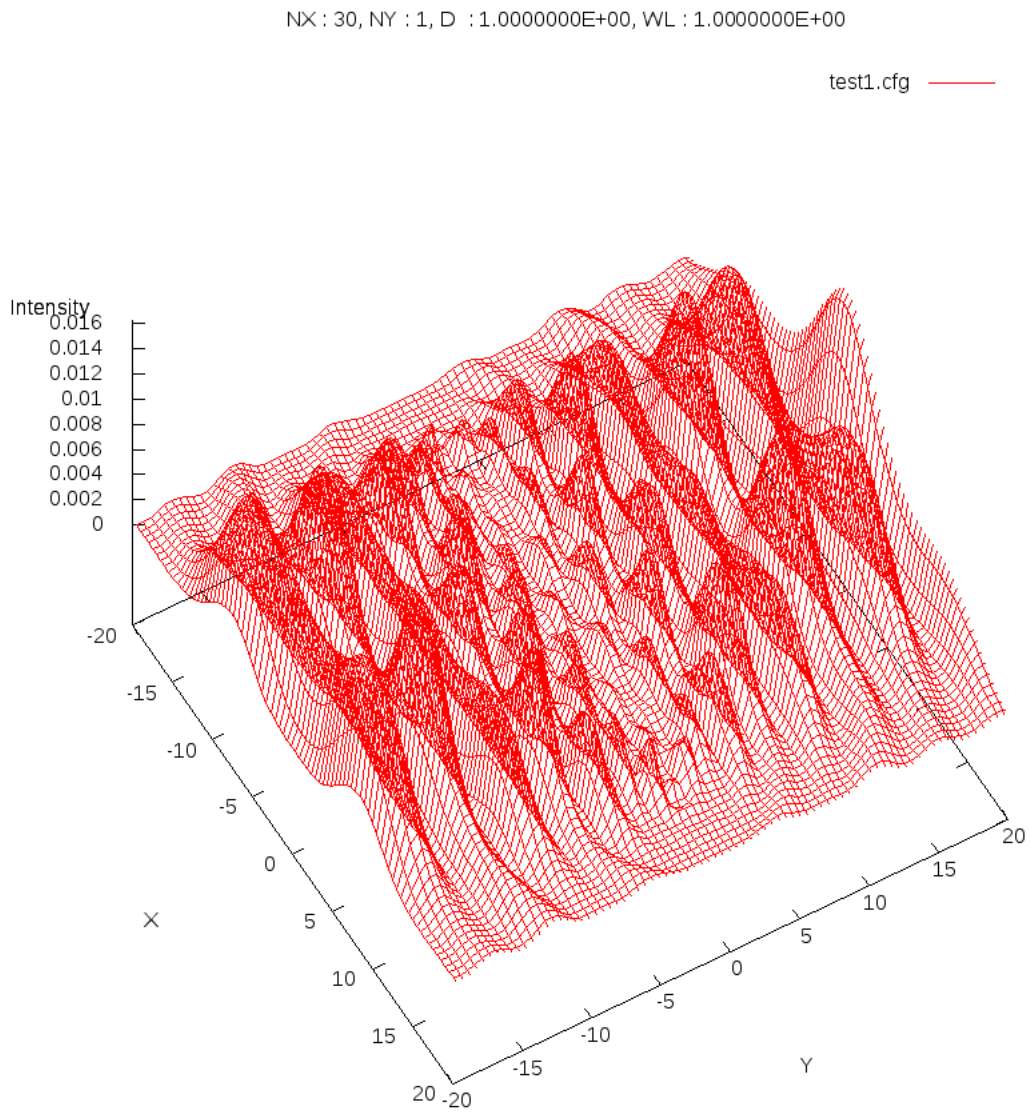

Figure 2: The resulting wave field around the X axis generated by 30 spherical sources located at the X-axis with a distance D.

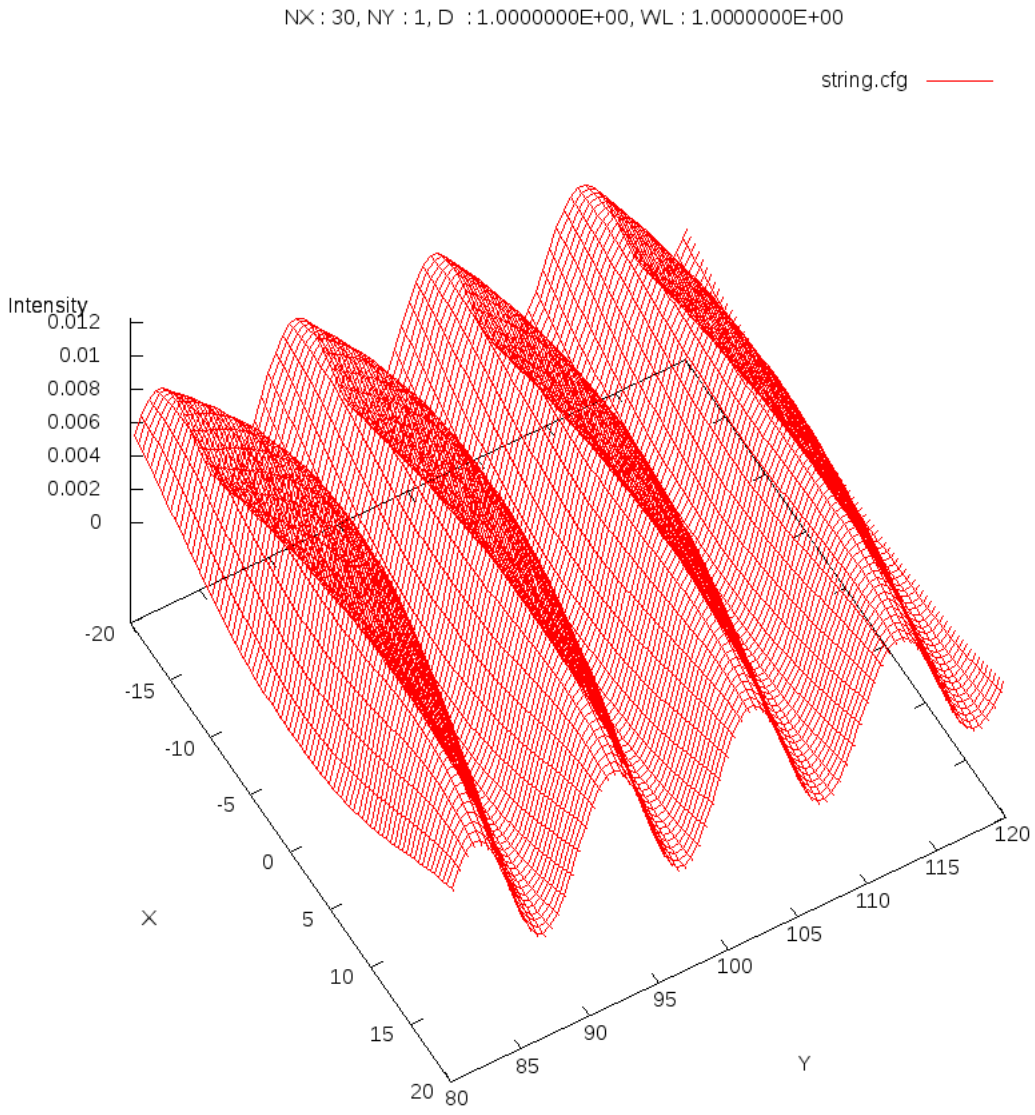

Figure 3: The Wavefield in a dstance of 80 units in Y direction generated by the oscillator string shown in 2