Aftershock prediction mathematical modelling

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Proposal for the development of the study of the wave shock impact over the shocksat structure and the impact over electronics elements used for control and management.

The study can be carried out using the free software GNU octave and performed to work on any computer, the precision was 0.25 inches (1/4"), for advanced case studies the precision could be modified, but it will require a machine with higher performance. The advantage of use the mathematical modelling technique to manage the finite element model is that the equations of the scenario could be easily modified.

Shocksat structure modelling

The shocksat is represented in a Cartesian plan with three dimension using different matrices to represent the surfaces, this way the prediction study could be carried out studding the vibration and the shock wave produced by the pyro loads using mathematical equations.

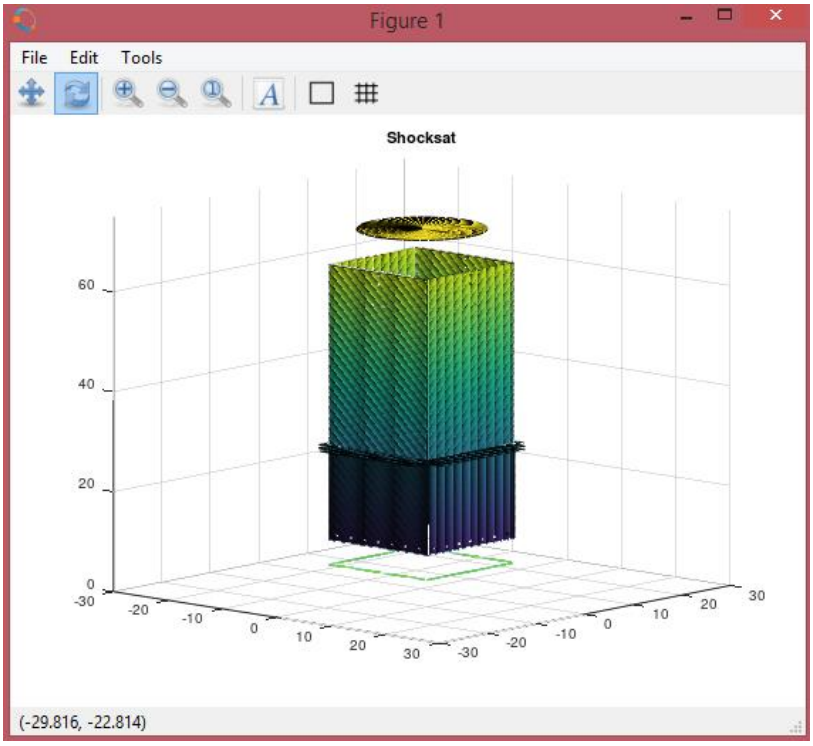

Ilustración 1: Shocksat model

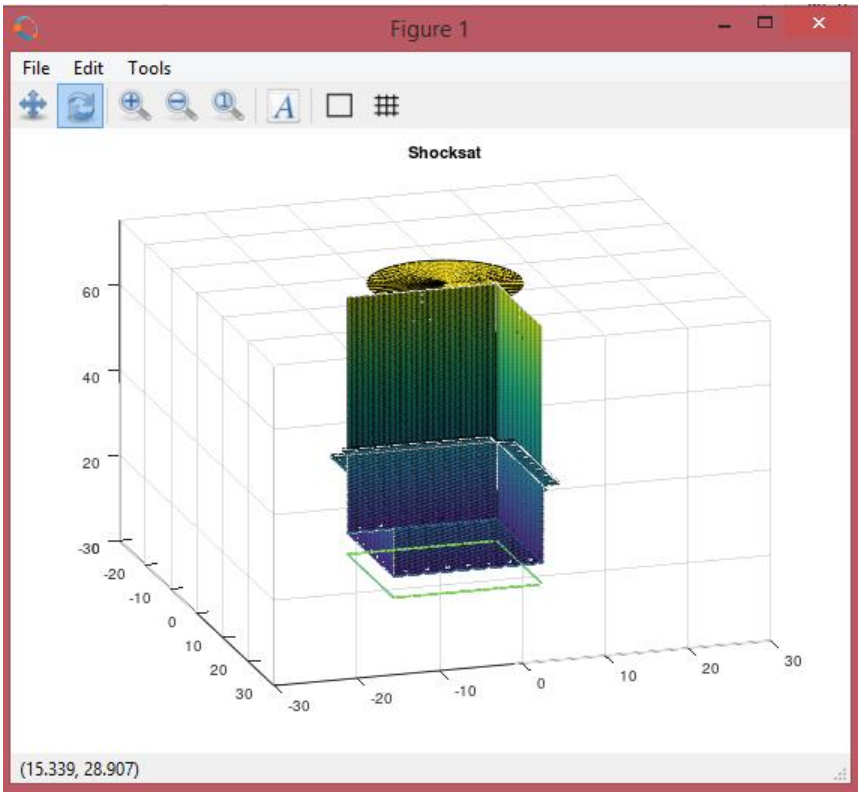

Ilustración 3: Shocksat model II

Botom box

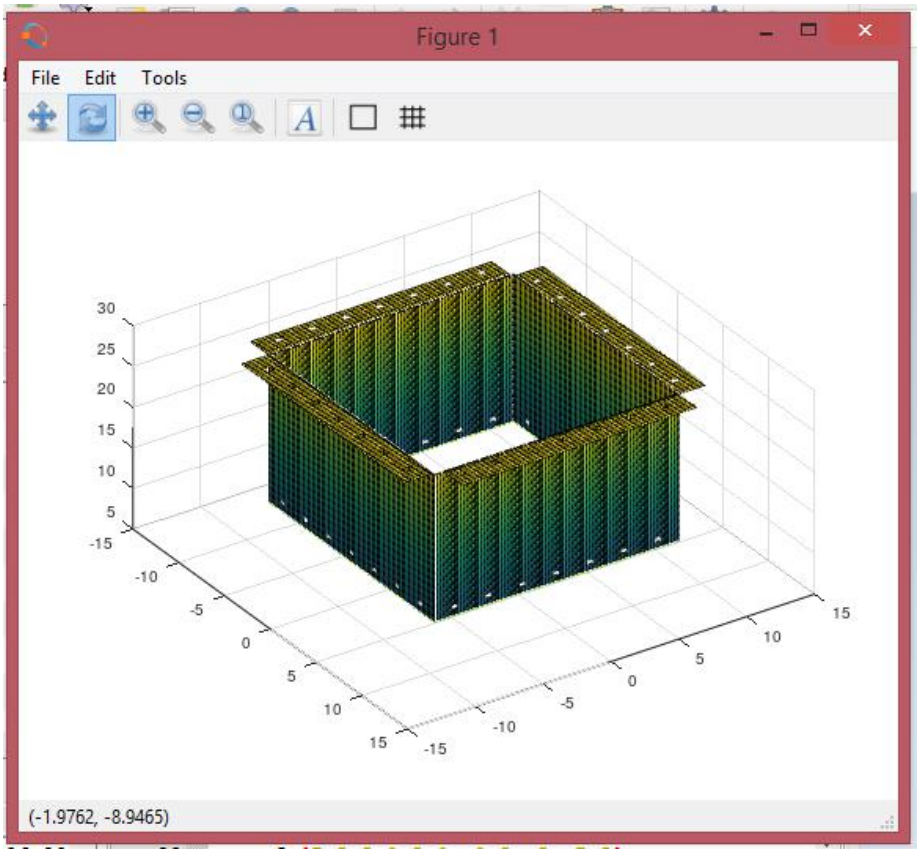

Ilustración 4: Shocksat bottom box

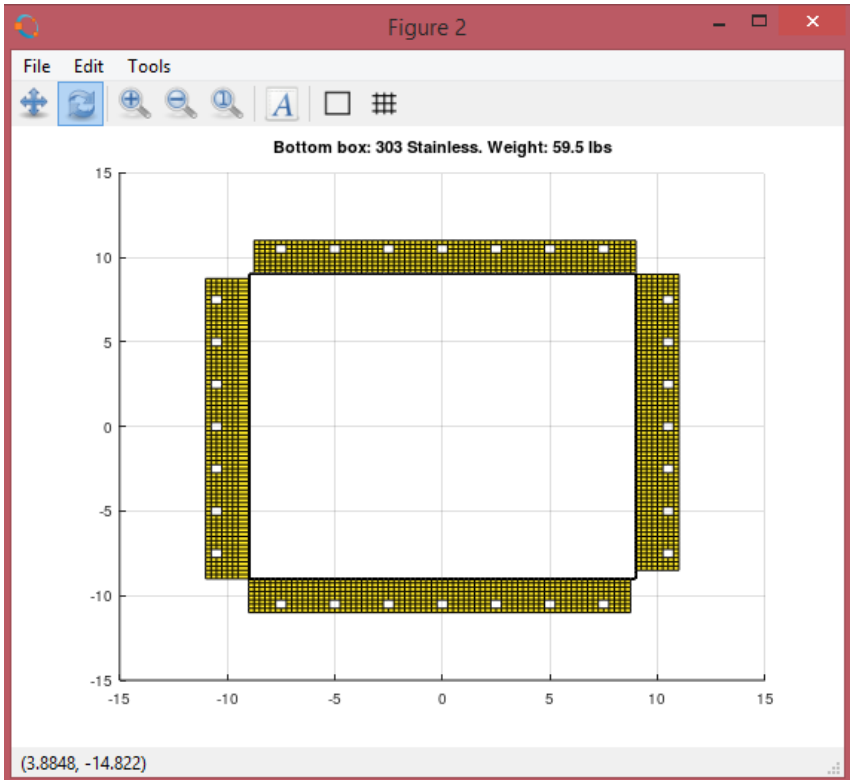

Ilustración 5Bottom box top view

Sattelite Dish

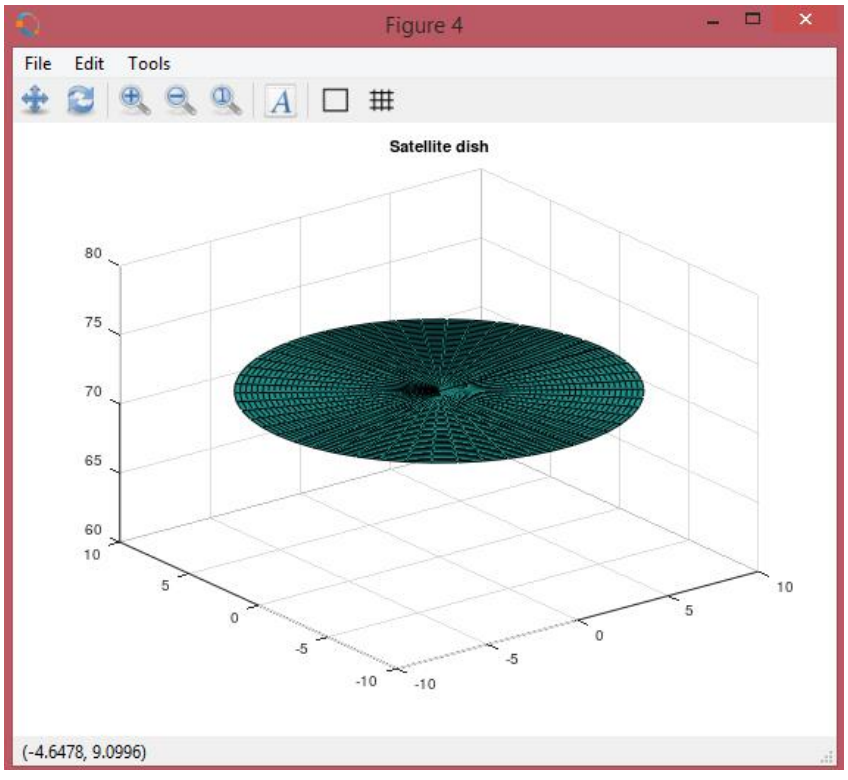

Ilustración 6: Satellite dish

To play the simulation download any octave version, ope the file AftrshckprdctnMain.m and click in the play button. The files for plot the shocksat elements (bttmbx.m, tpbx.m and SatelliteDish.m) should be in the same folder.