# Rectangular\_cavity

Calculate the resonant frequencies of a rectangular cavity loaded with dielectric/ magnetic material.

## Geometry description:

Rectangular cavity, lx × ly × lz with perfectly conducting walls.

lz

z

y

ly

lx

x

The cavity is loaded with material with a specified, constant relative permittivity and permability.

Run with the command:

**rectangular\_cavity**

inputs:

lx ly lz :cavity dimensions in metres

epsr :relative permittivity

mur :relative permeability

nx\_min ny\_min nz\_min :minimum mode indices in x, y and z

nx\_max ny\_max nz\_max :maximum mode indices in x, y and z

outputs:

A file **rectangular\_cavity\_modes** is created which has the modes listed in order of frequency. The format is:

nx ny nz frequency