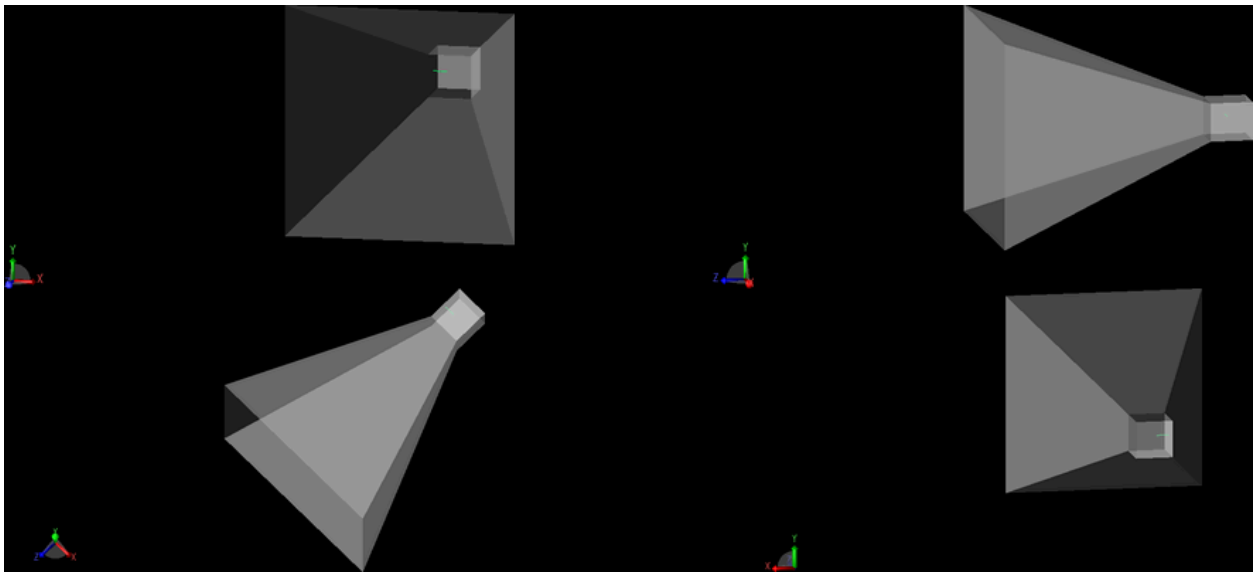
Example outputs

Horn

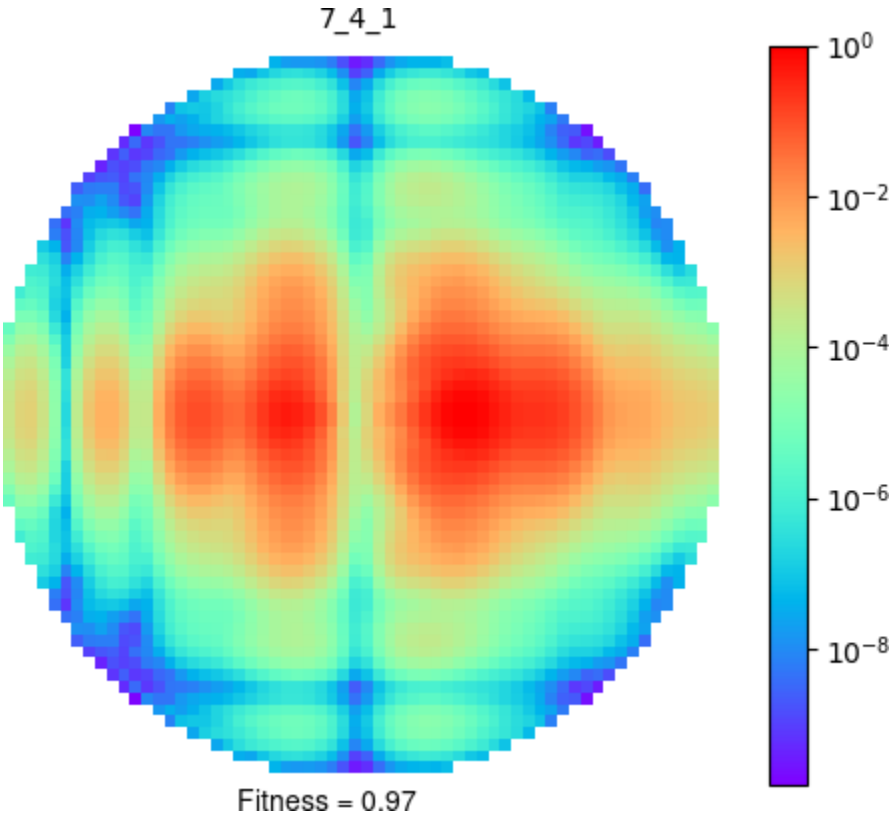
A horn is created by JavaScript code in xfdtd, and plotted by xfdtd. This image shows 4 views of the same horn, from top-left clockwise they are: view from the front, from the side, from the top, from the rear.



Beam pattern

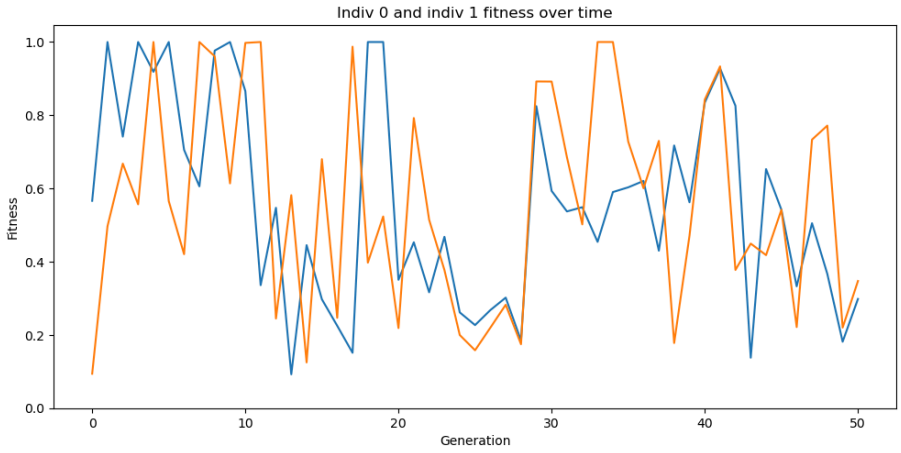
The beam is extracted as UAN files, converted to our internal format, and plotted. The beam is viewed from above and projected onto the ground, with the color scale indicating the power. The

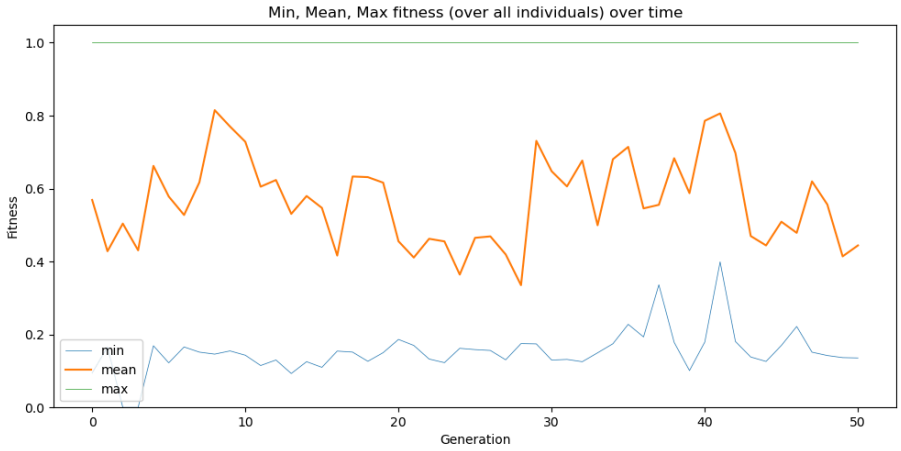
circular edge of the plot is the horizon, the centre is zenith. The beam power is normalized to a maximum = 1. Example:

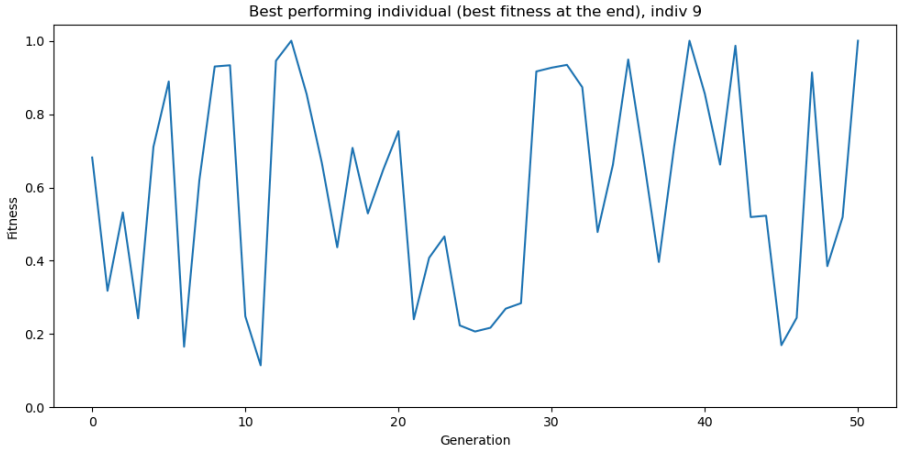


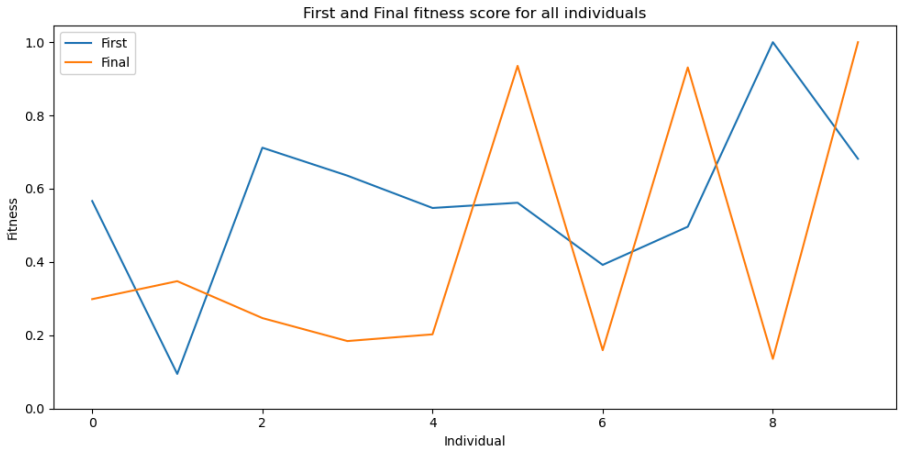
Genetic algorithm monitoring

Many plots can be devised that show the progress of the genetic algorithm. The main entities to look at are: fitness scores, gene values, individuals, and how they evolve over time. The following plots are examples of obvious things to look at:

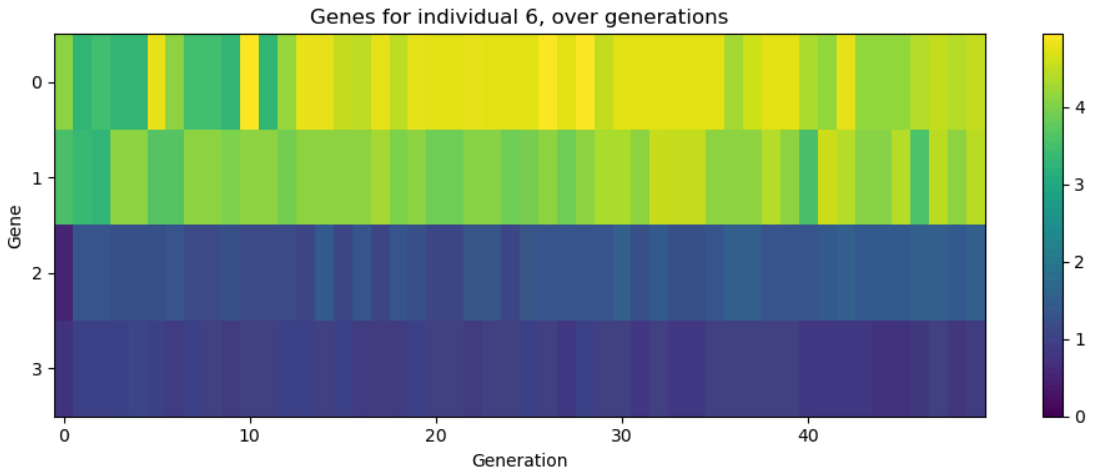

Indiv 0 and indiv 1 fitness over time
Fitness
Generation


Min, Mean, Max fitness (over all individuals) over time
min
mean
max
Fitness
Generation


Best performing individual (best fitness at the end), indiv 9
Fitness
Generation


First and Final fitness score for all individuals
First
Final
Fitness
Individual

The values of genes may be useful to look at depending on how interesting the parameters of the horn are:



Movies and 3-D plots

As there is a lot of data generated, movies and 3-D plots could be useful. An example movie showing beams ordered by fitness (not really apparent in the movie) is at
horn_batch_score_gauss.mp4