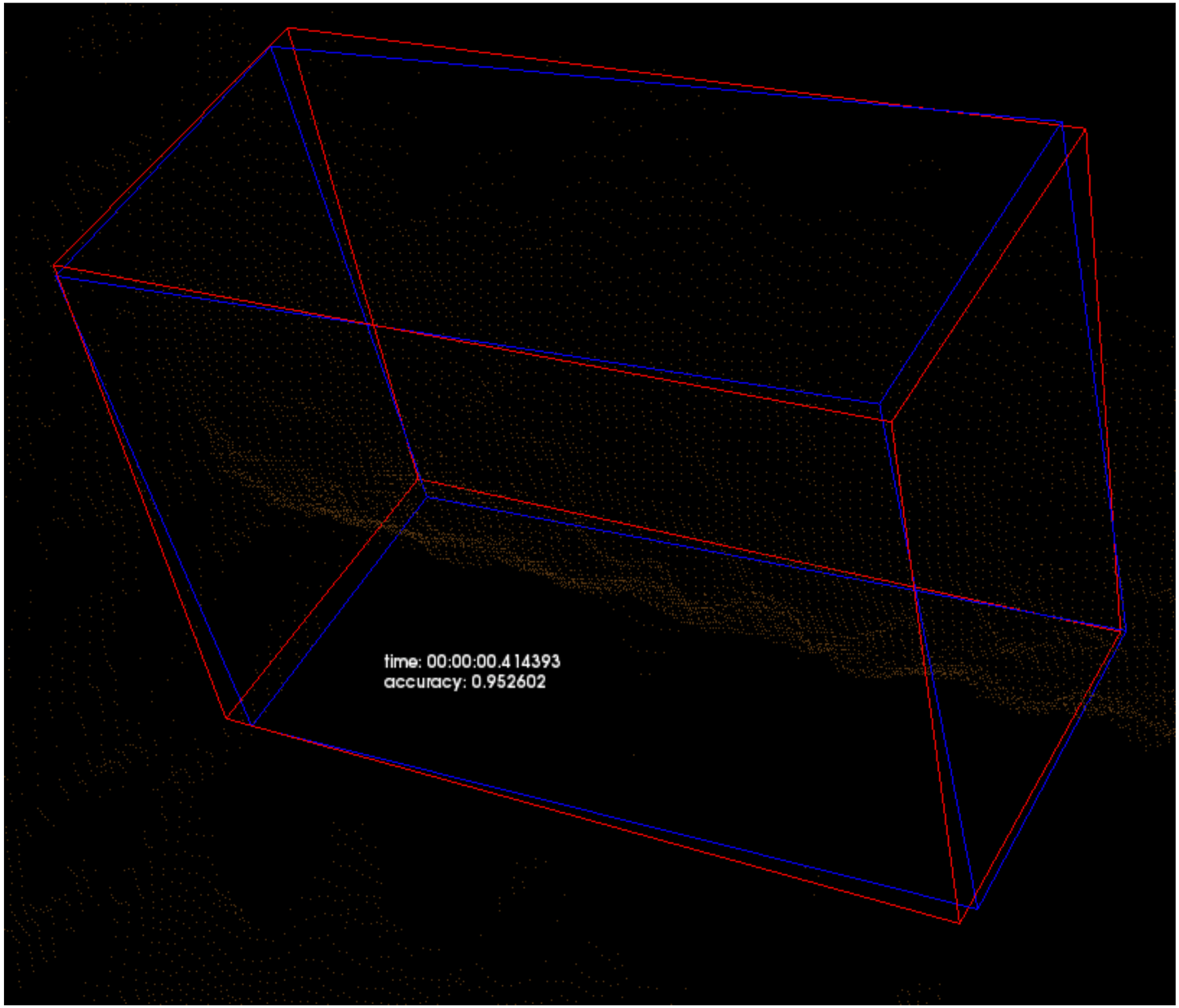
How to calculate the accuracy of one bounding box with respect to another?



One Possible Method

eight corners of the cube

$$\text{accuracy} = \prod_{i=1}^{8} 2^{-sd_i}$$

where,

$$d_i = \sqrt{(x_{1_i} - x_{2_i})^2 + (y_{1_i} - y_{2_i})^2 + (z_{1_i} - z_{2_i})^2}$$

and *s* is some appropriately chosen scale factor. In our case, *s* = 2, meaning the accuracy halves with every 2 cm of distance.

In other words: take the cumulative product of the accuracy of each corner, where the accuracy of a corner is proportional to the decaying exponential of the distance from its corresponding corner in the other bounding box.