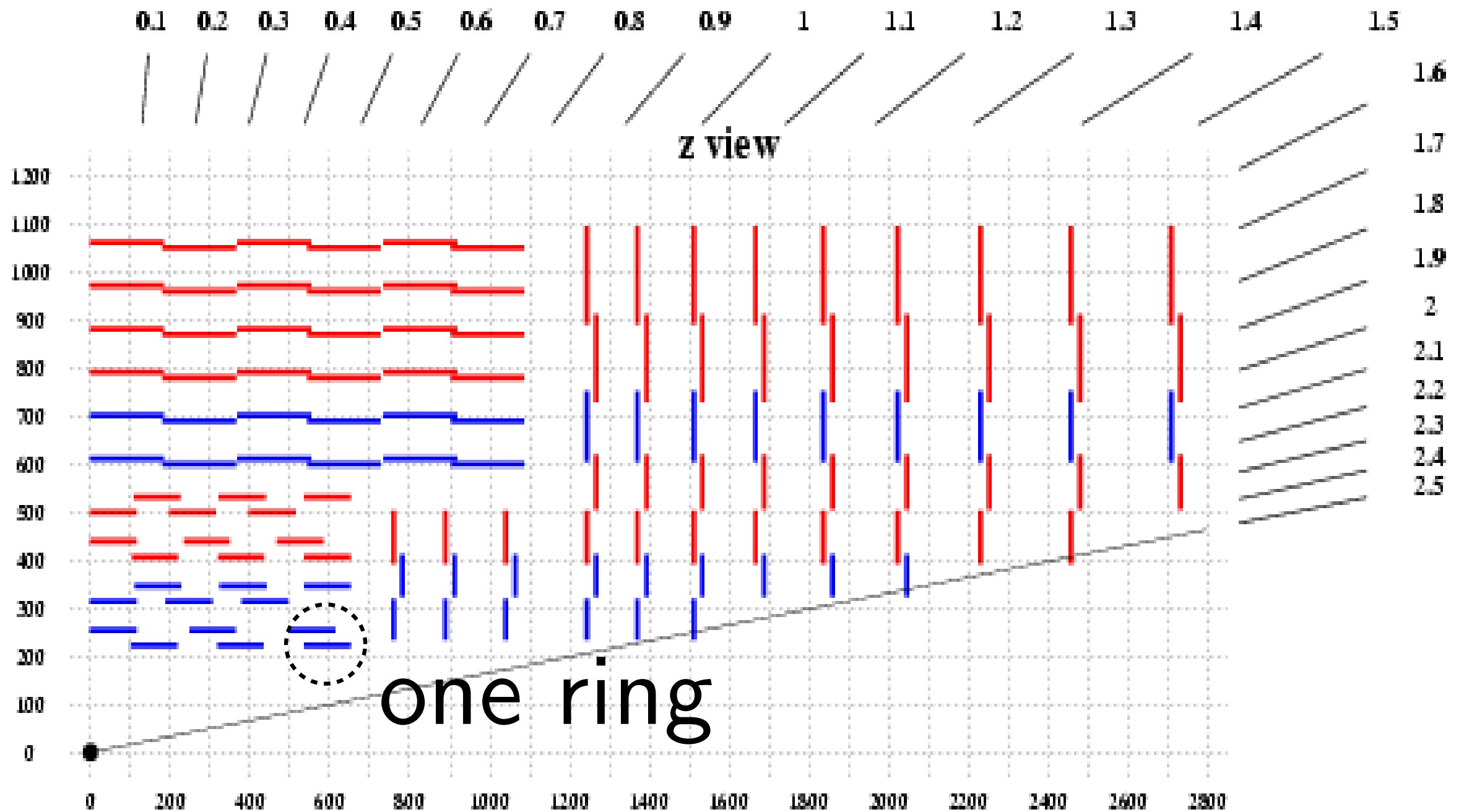


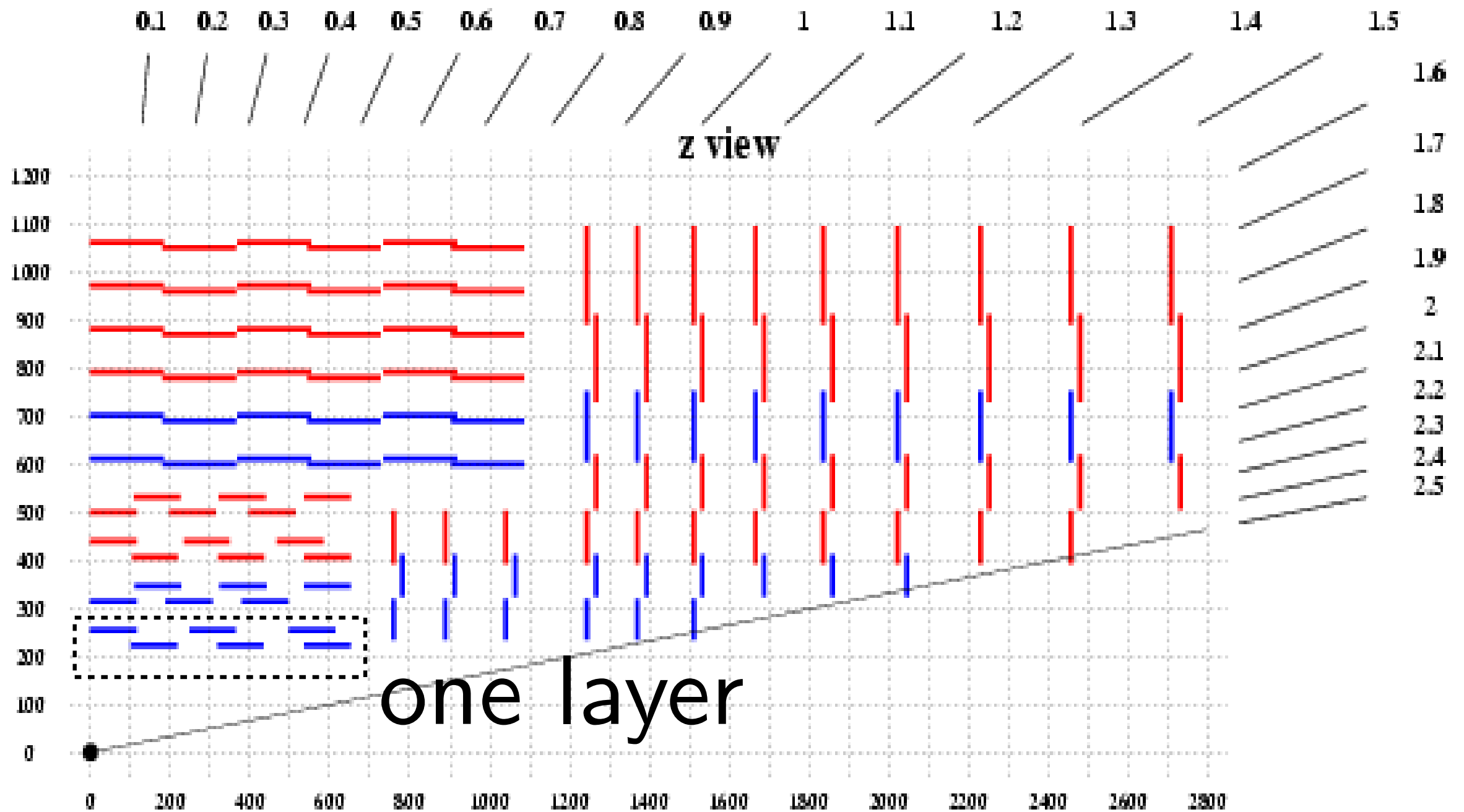
The figure is a 3D plot with the following characteristics:

- Vertical Axis (Time):** Ranges from 0 to 1300 with major ticks every 100 units.
- Horizontal Axis (Spatial Coordinate):** Ranges from 0 to 2800 with major ticks every 200 units.
- Depth Axis (Parameter):** Ranges from 0.1 to 1.5 with major ticks every 0.1 units.
- Data Representation:** The data is shown as a series of horizontal line segments. Red segments are located at higher time values (approx. 800-1100), while blue segments are at lower time values (approx. 200-700). The segments are distributed across the spatial coordinate.
- Annotations:** The text "z view" is centered in the plot area. A black dot is located at the origin (0,0,0).

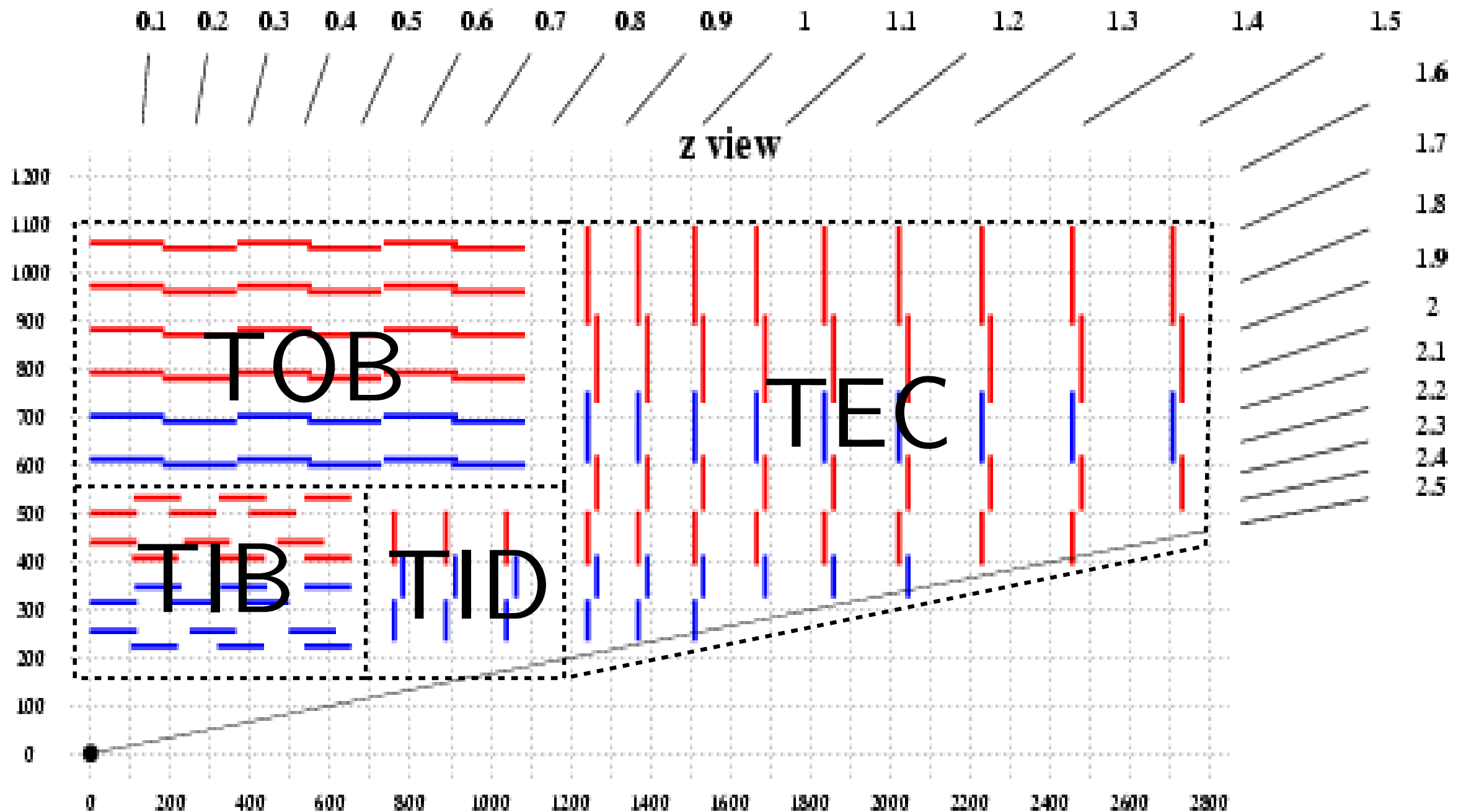
Parts of the Tracker



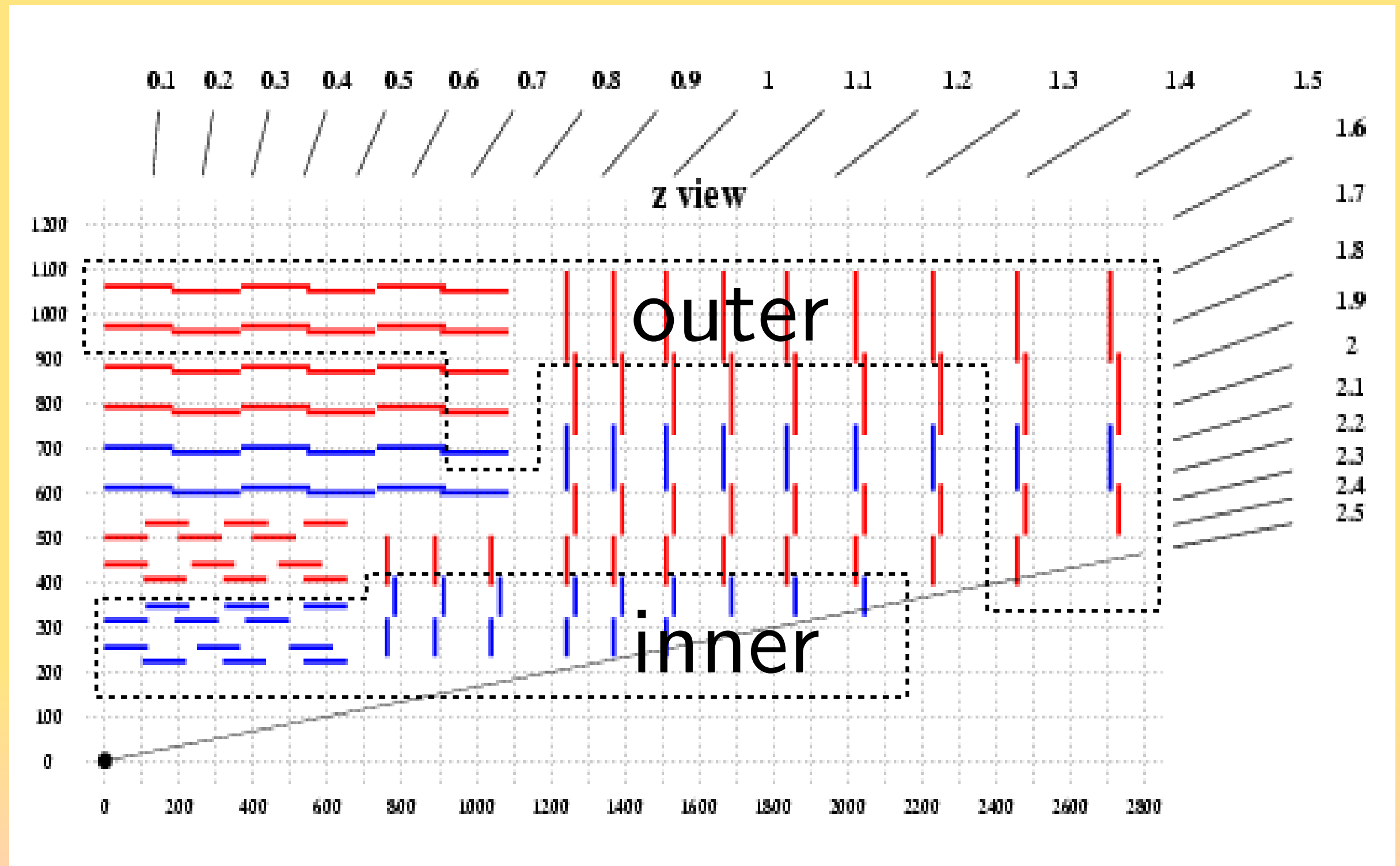
Parts of the Tracker



Parts of the Tracker

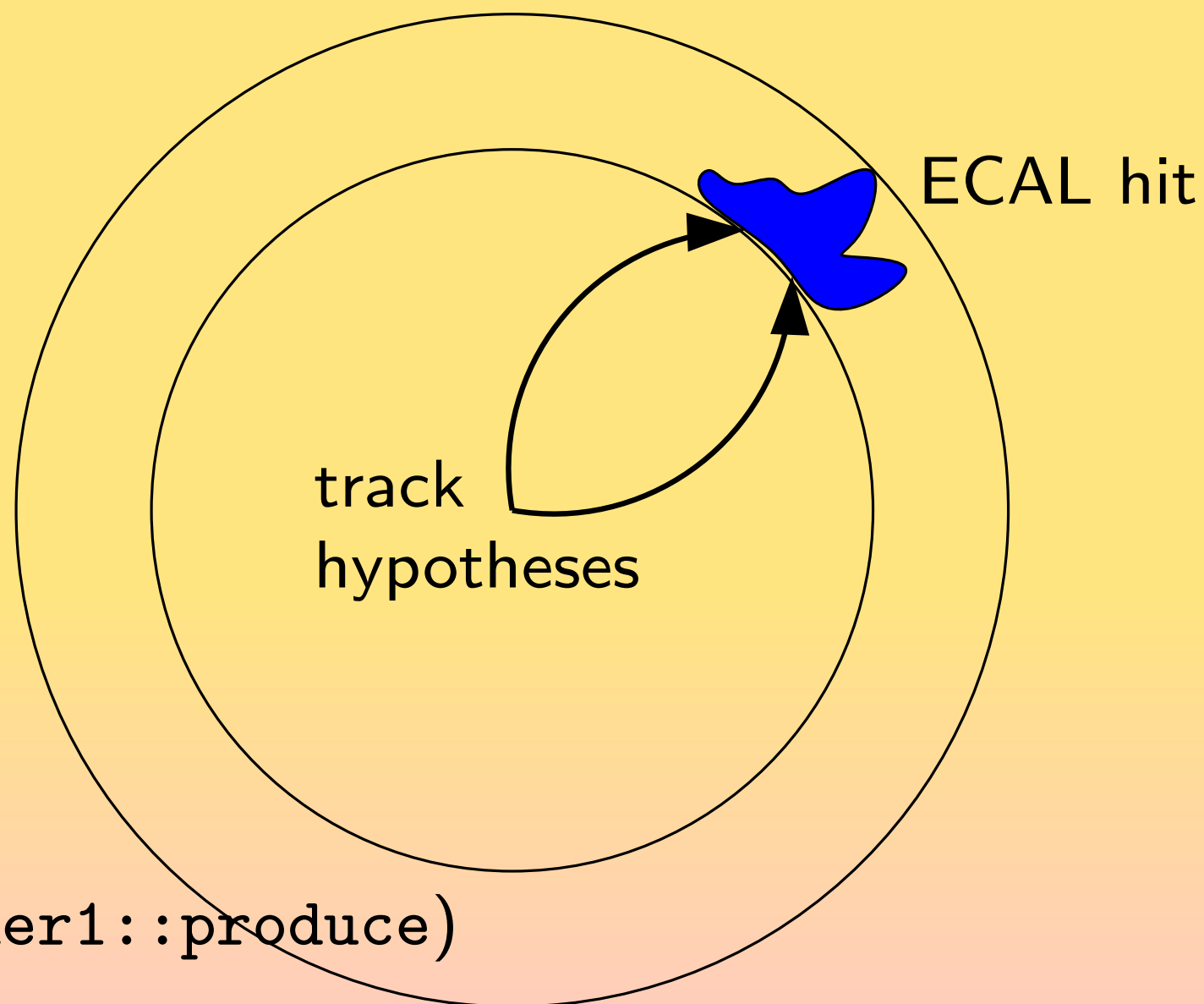


$$\{\text{Roads}\} = \{\text{inner rings}\} \times \{\text{outer rings}\}$$



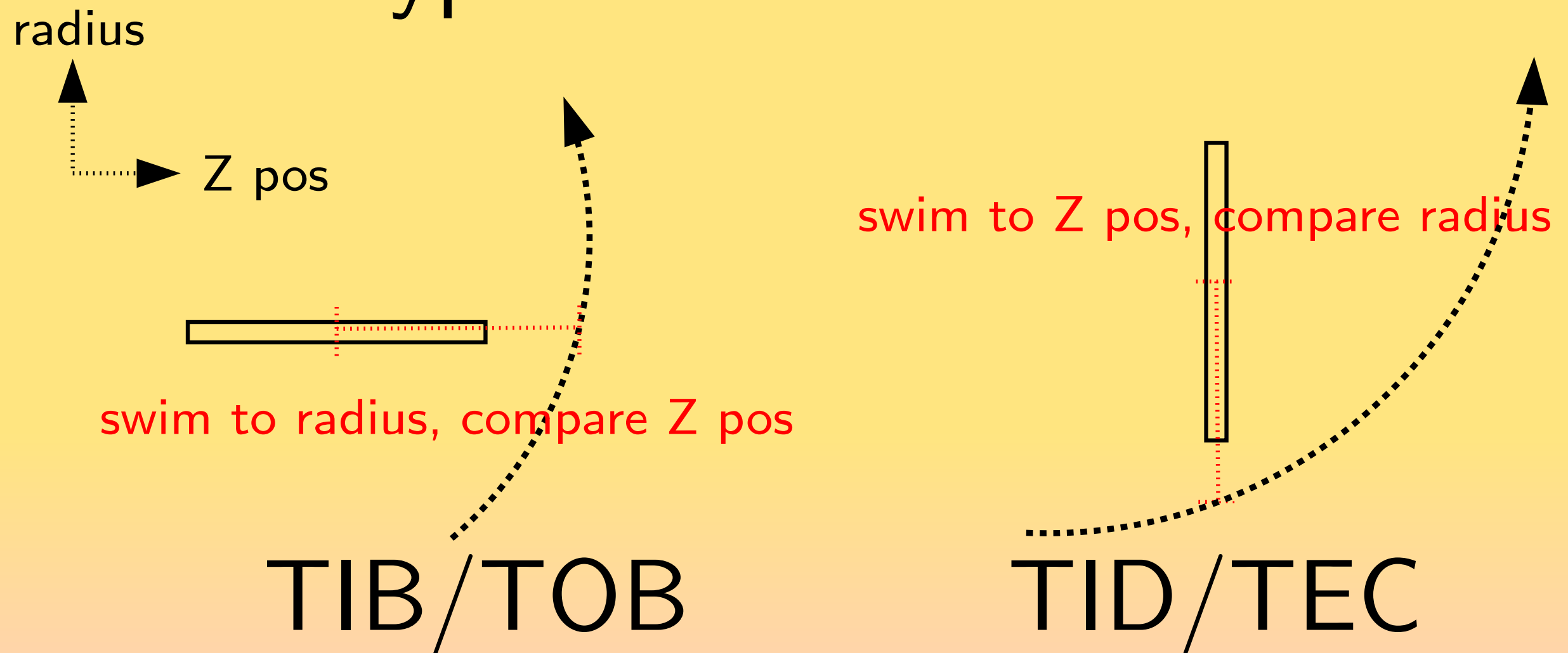
Algorithm in ECALSeedFinder1.cc:

For each energetic ECAL cluster,
identify two track hypotheses



(in ECALSeedFinder1::produce)

For each track hypothesis:
loop over roads
skip rings which are far from
hypothesis track in R-Z



(in ECALSeedFinder1::findSeeds)

For each acceptable ring,
 select DetIds close to track in ϕ

(“Ring” data structure is a fast lookup
table, keyed on ϕ)

For each acceptable DetId,
 identify all hits (not yet written)

(in ECALSeedFinder1::findHits)

Pop out to loop over all Roads with lists of identified inner and outer hits

loop over $\{\text{inner}\} \times \{\text{outer}\}$

project origin + inner + outer helix

is it close to cluster position/energy?

(not yet written)

(will be in `ECALSeedFinder1::findSeeds`)

Speed of algorithm

$\mathcal{O}(\#roads) \times$

$\mathcal{O}(\text{av.}\#\text{hits in selected inner DetIds}) \times$

$\mathcal{O}(\text{av.}\#\text{hits in selected outer DetIds})$

Advantage over full tracking:

1. Reject many DetIds before looking at hits
2. Only consider seeds (origin + inner + outer) that point to clusters