The reconstruction software for the ALICE central tracking detectors (ITS, TPC and TRD) shares a common convention on the coordinate system used. All the clusters and tracks are always expressed in some local coordinate system related to a given sub-detector (TPC sector, ITS module etc). This local coordinate system is defined as the following (see also Fig. 5.9, page 1329):

- it is a right handed-Cartesian coordinate system;
- its origin and the z axis coincide with those of the global ALICE coordinate system;
- the x axis is perpendicular to the sub-detector's 'sensitive plane' (TPC pad row, ITS ladder, etc).

Such a choice reflects the symmetry of the ALICE set-up and therefore simplifies the reconstruction equations. It also enables the fastest possible transformations from a local coordinate system to the global one and back again, since these transformations become simple single rotations around the z-axis.

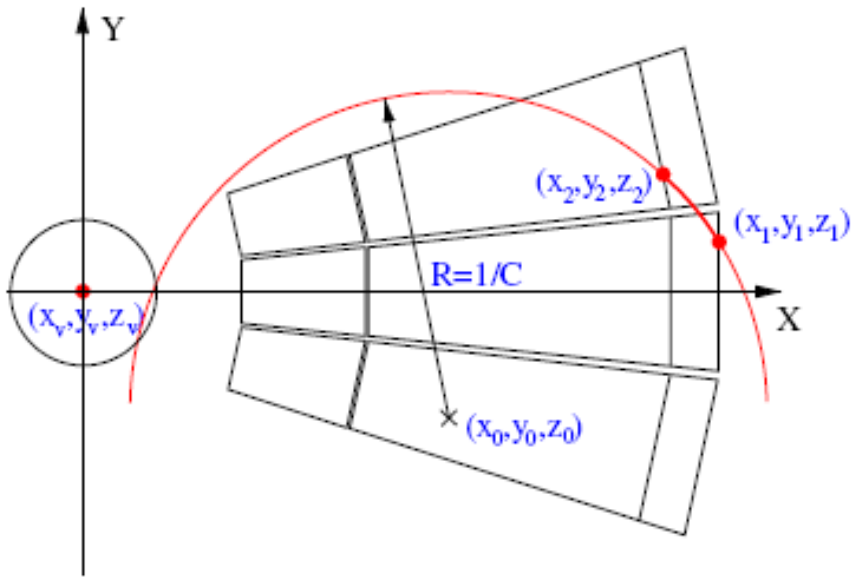

Figure 5.9. Track-finding coordinate system, track parameters and the schematic view of the 'seeding' with the vertex constraint.