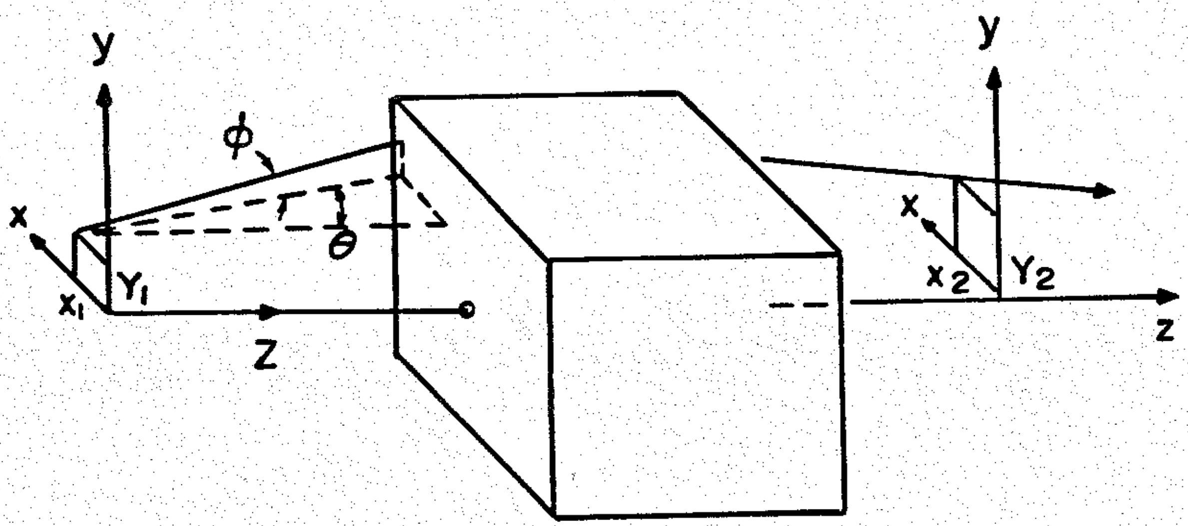

Figure 1. Input and output coordinates for an arbitrary ion-optical system consisting of any number of individual elements.

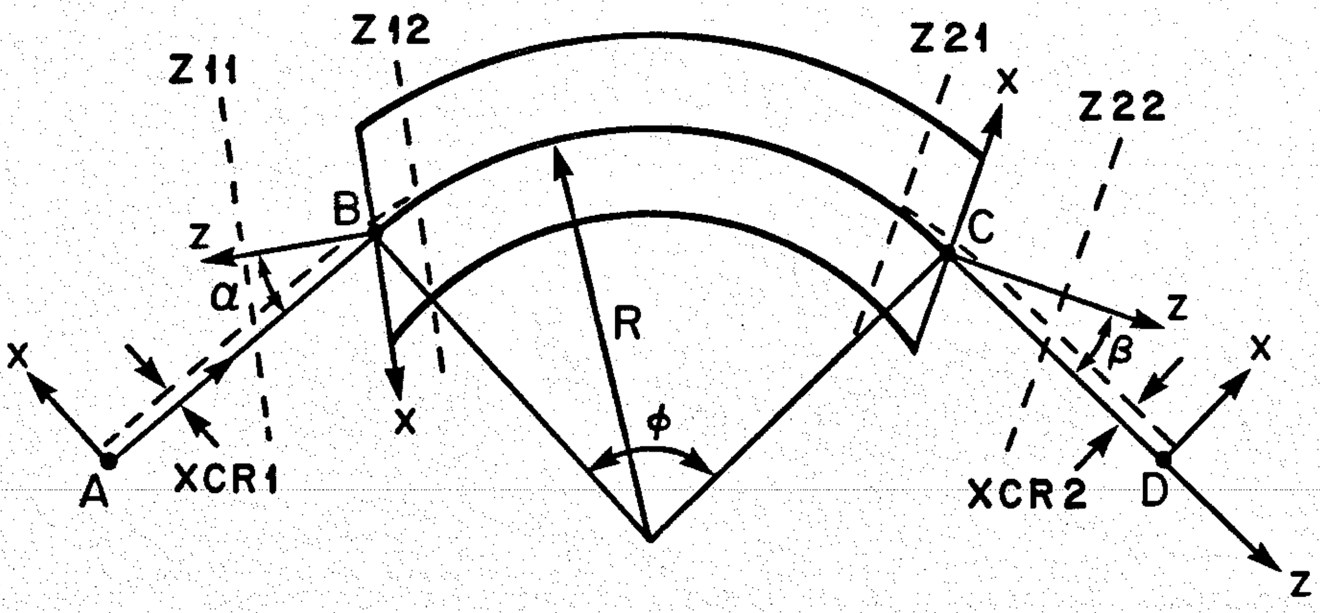

Figure 2. Definition of the most important parameters used in the DIPOLE subroutine.

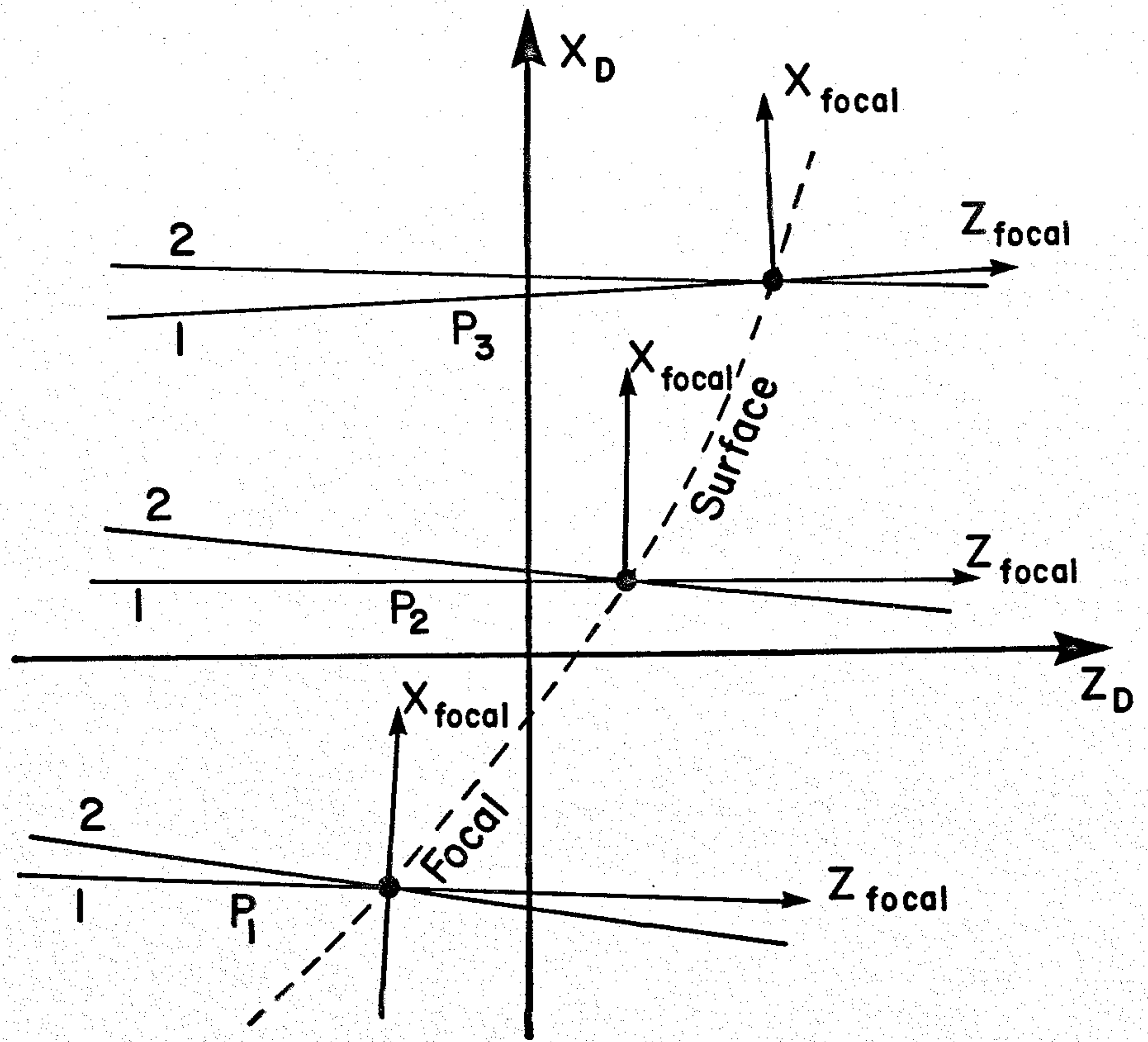

Figure 3. Output coordinate system formed at the intersection of Ray 1 and Ray 2 for three different momenta.

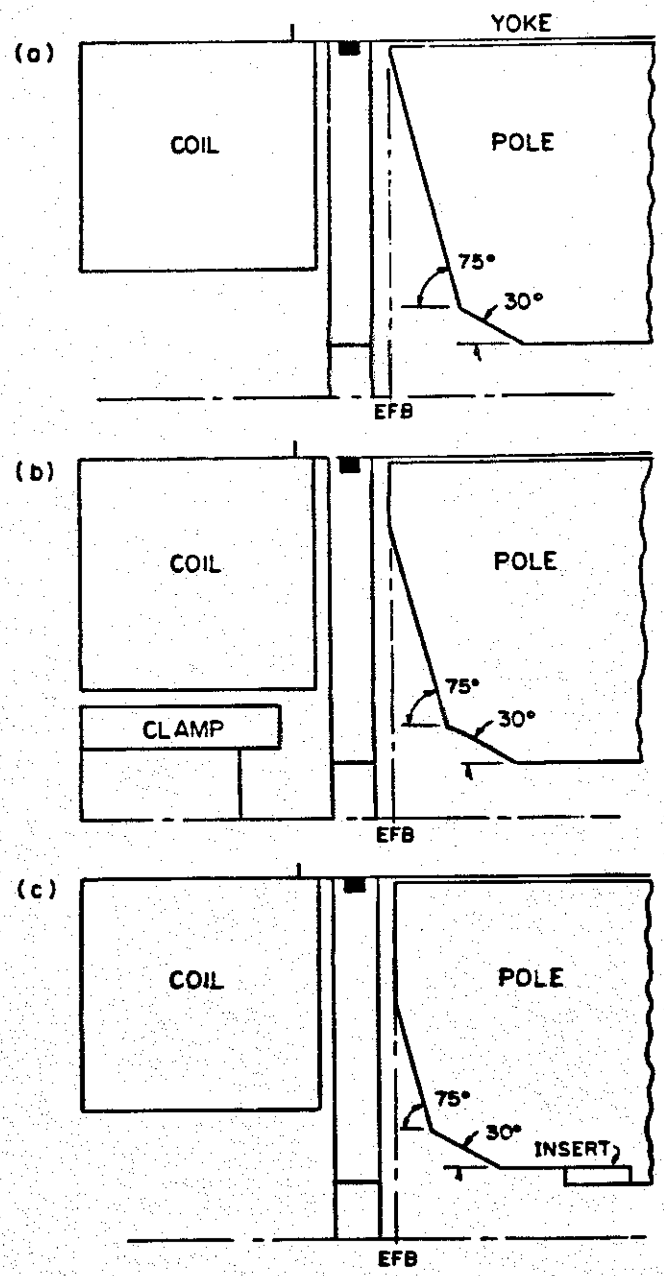

Figure 4. Rogowski pole profiles for three different cases. All are designed such that the Effective-Field Boundary (EFB) approximately coincides with the upper portion of the pole.

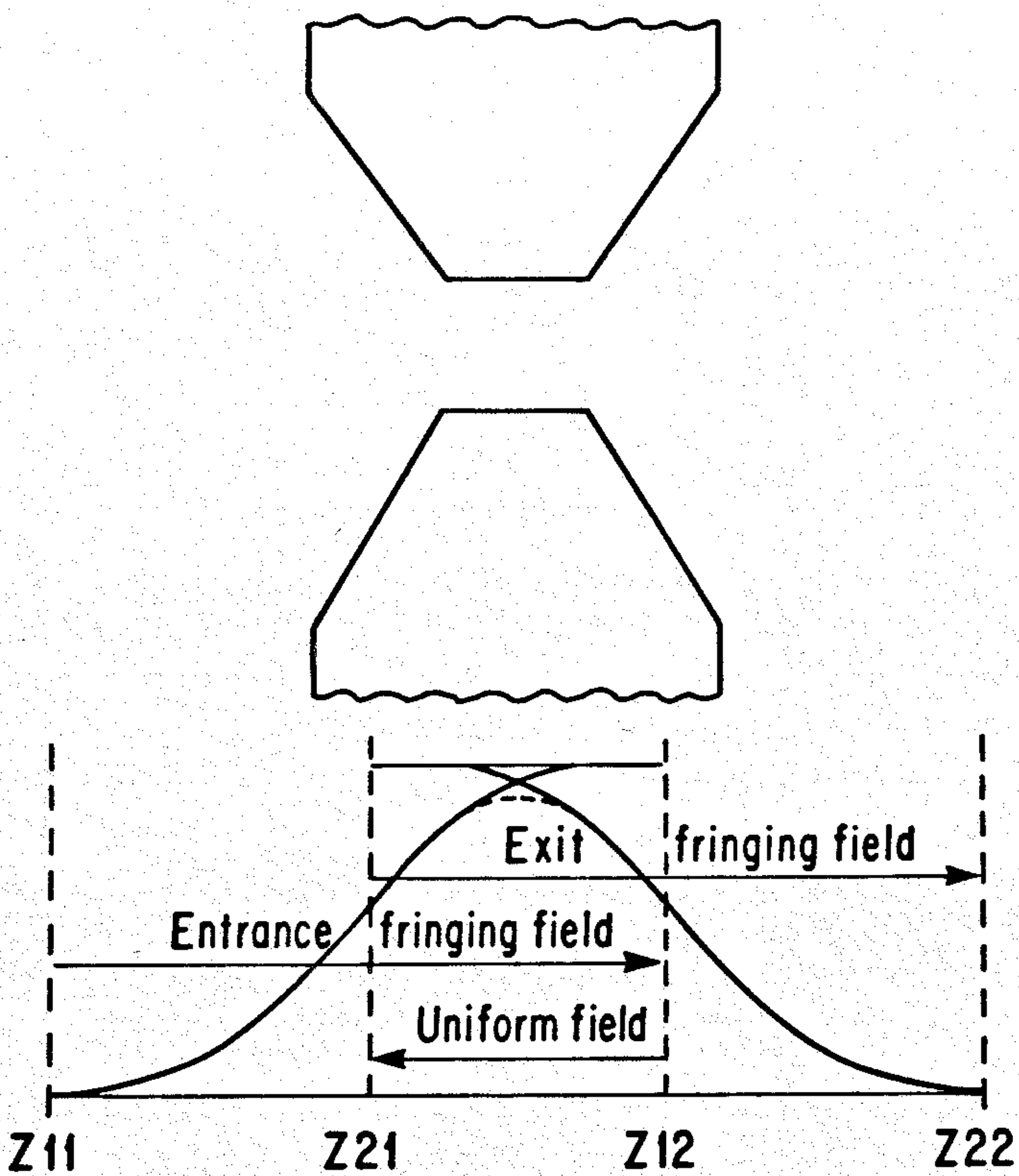

Figure 5. Overlapping fringing-field zones. The dashed curve indicates approximately what the net effect will be on the particle by the "backward" integration.

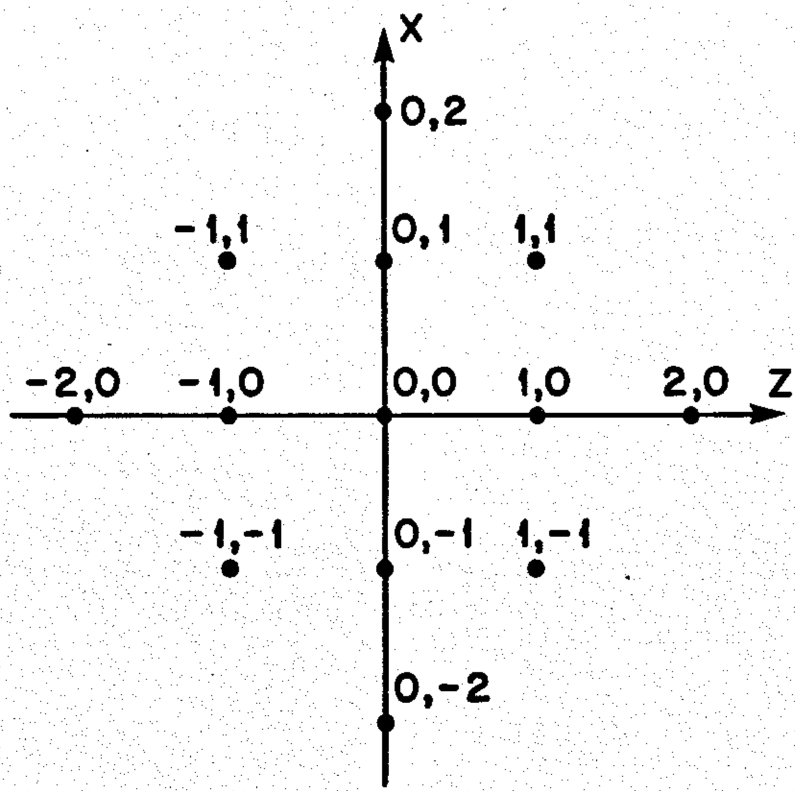

Figure 6. Thirteen-point grid used to determine numerical derivatives of B_y in the median plane.

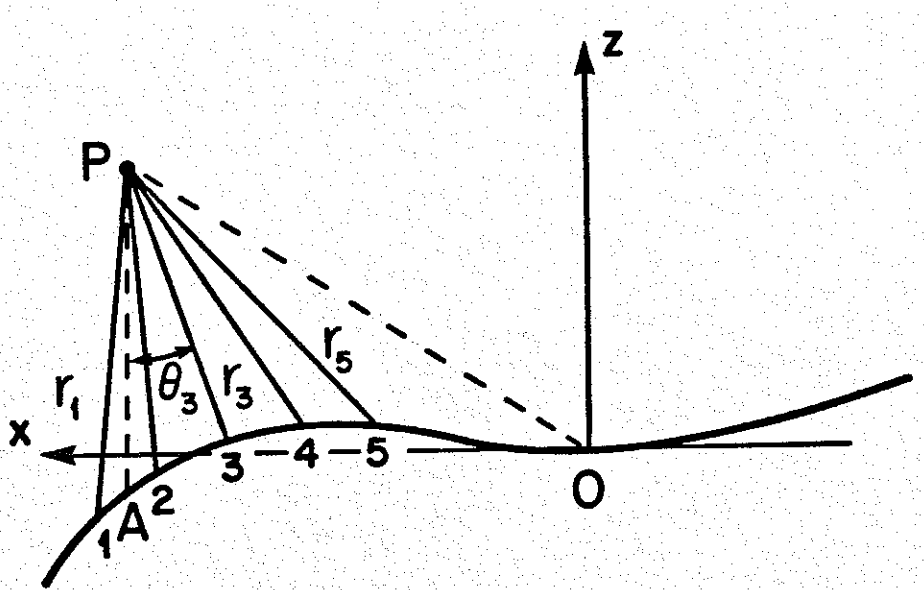

Figure 7. A spray of five "feeler rays" used to determine a representative distance to the EFB and thereby the value of B_y.

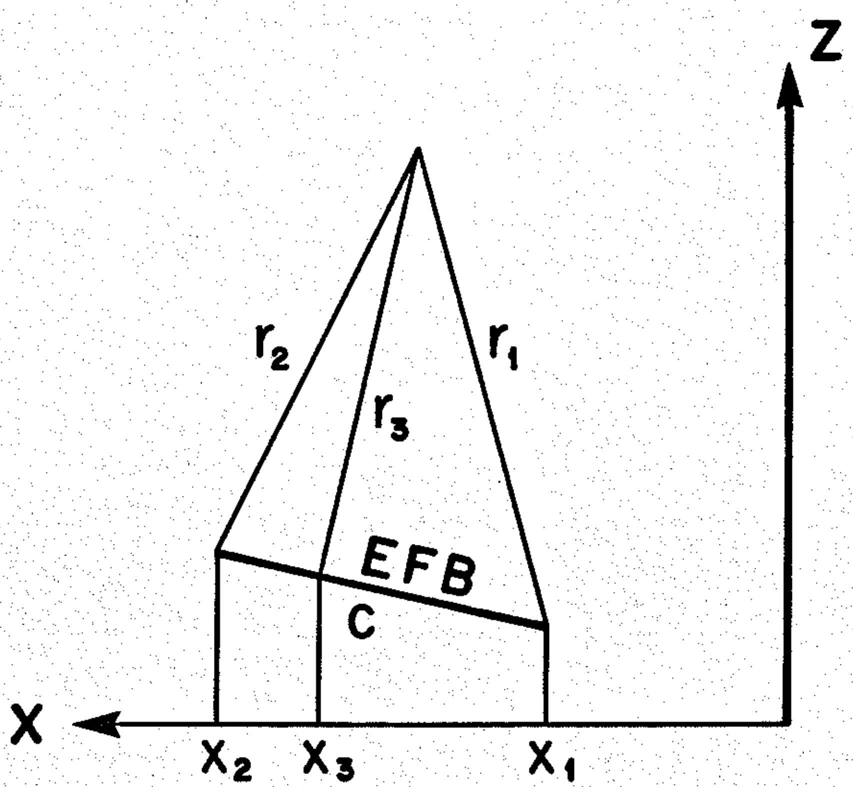

Figure 8. Trigonometry used to evaluate the shortest distance between the field point and the boundary.

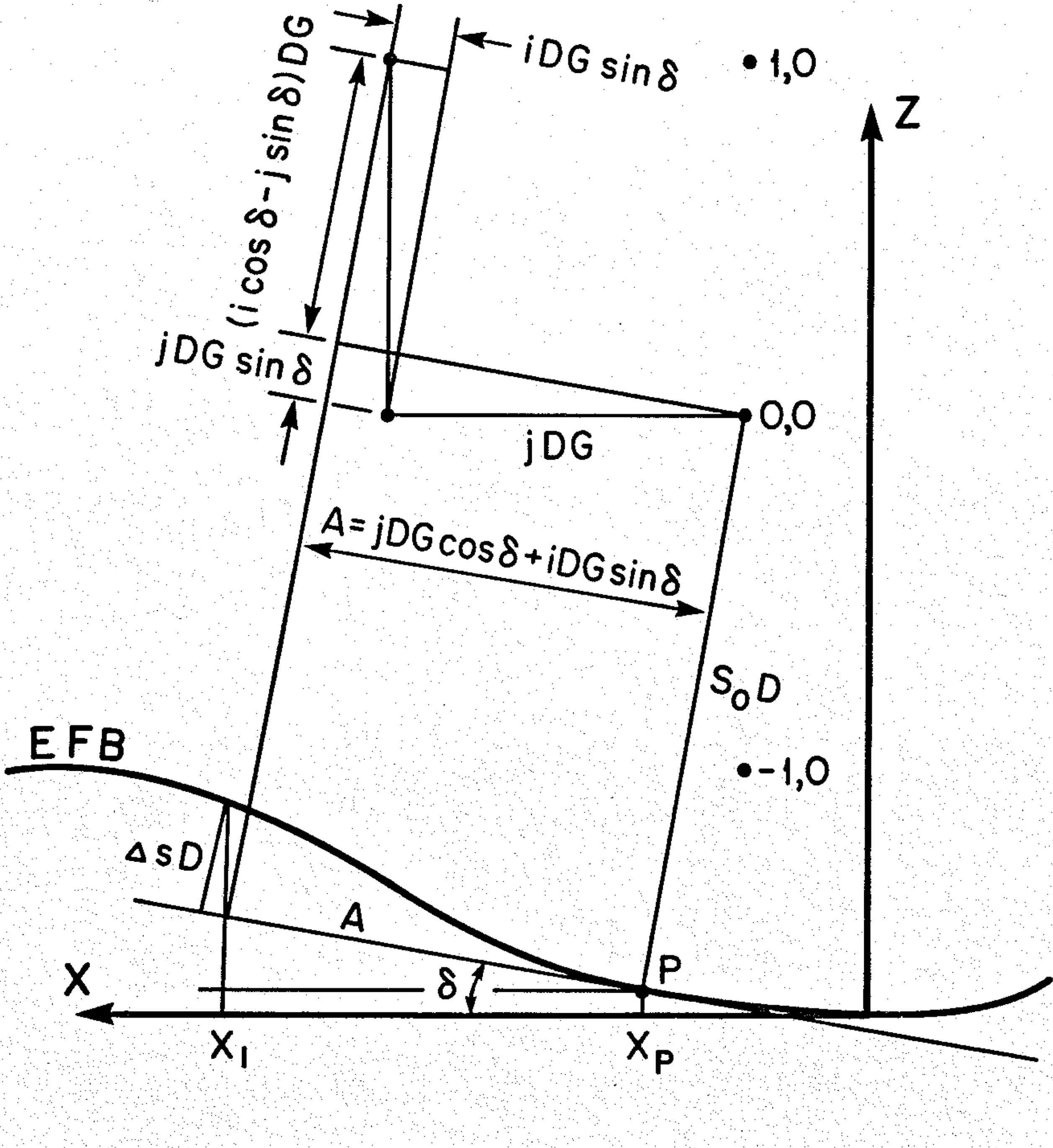

Figure 9. Geometry used for determining corrections to sD which are required for calculating off-midplane components of B.

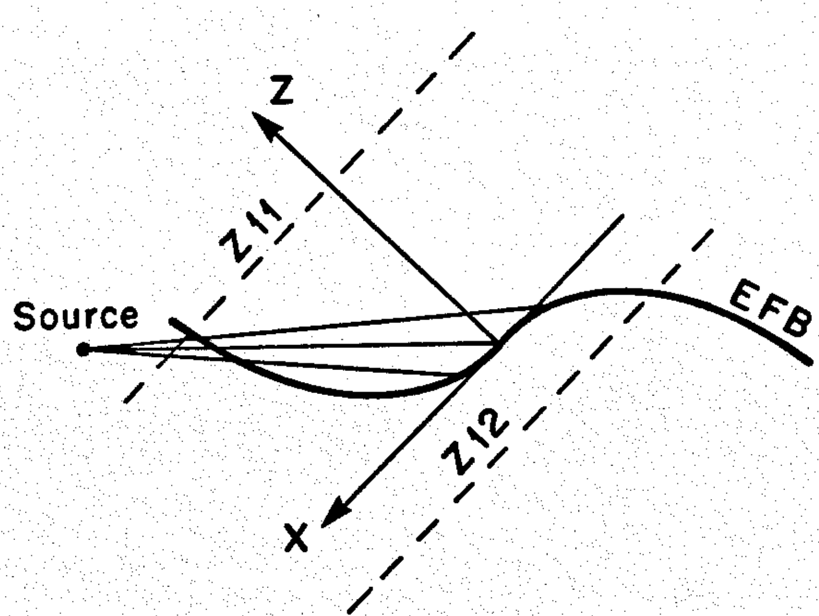

Figure 10. Possible result of an indiscriminate use of the parameters SO2, etc. that describe the shape of the EFB.

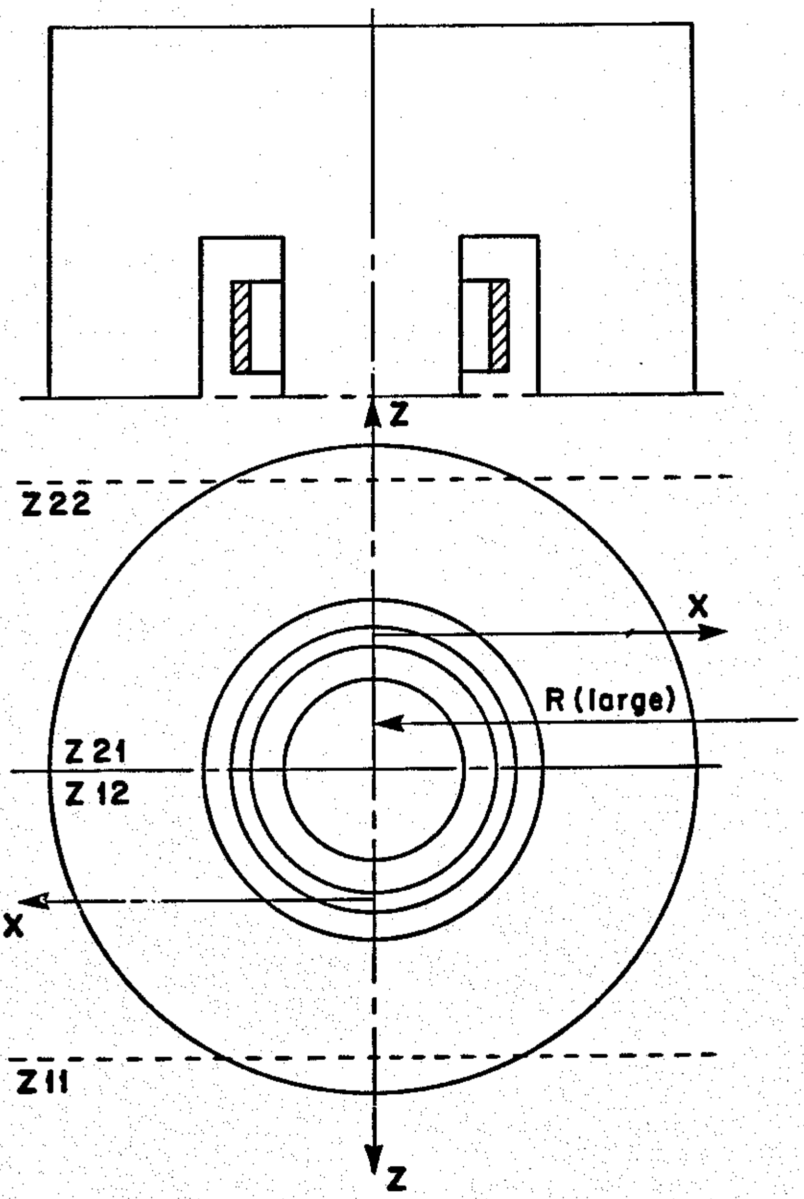

Figure 11. Magnetic dipole with circular poles (MTYP = 5).

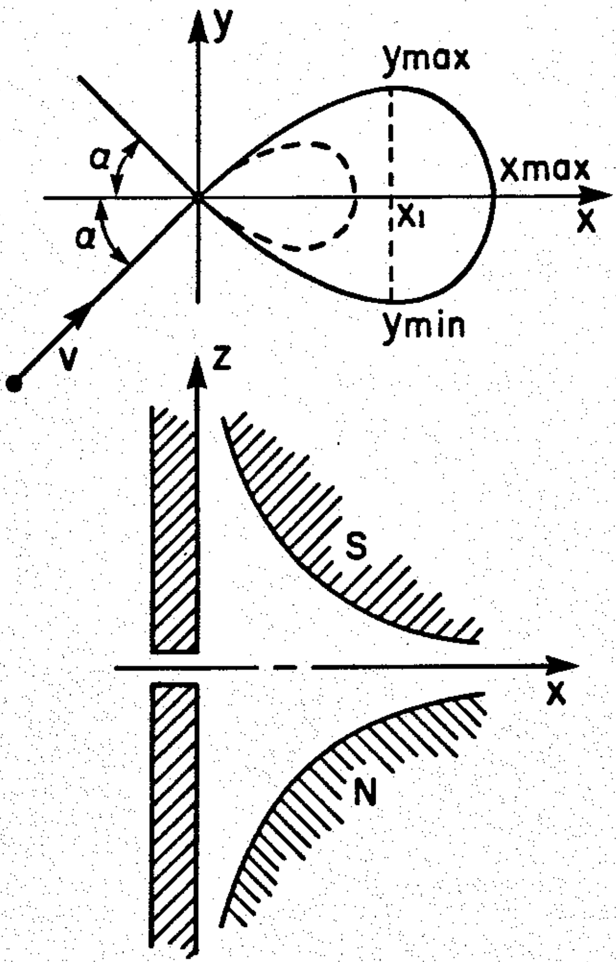

Figure 12. Pretzel magnet (MTYP = 6).

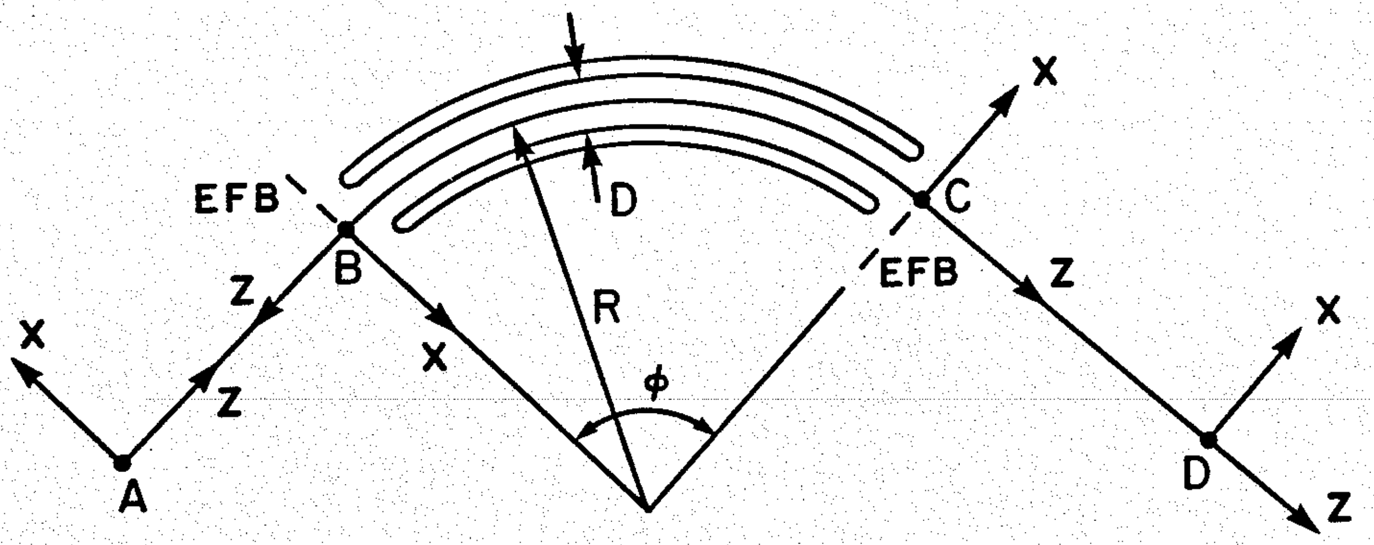

Figure 13. Electrostatic cylinder deflector and the geometry of the coordinate systems used in EDIPL.

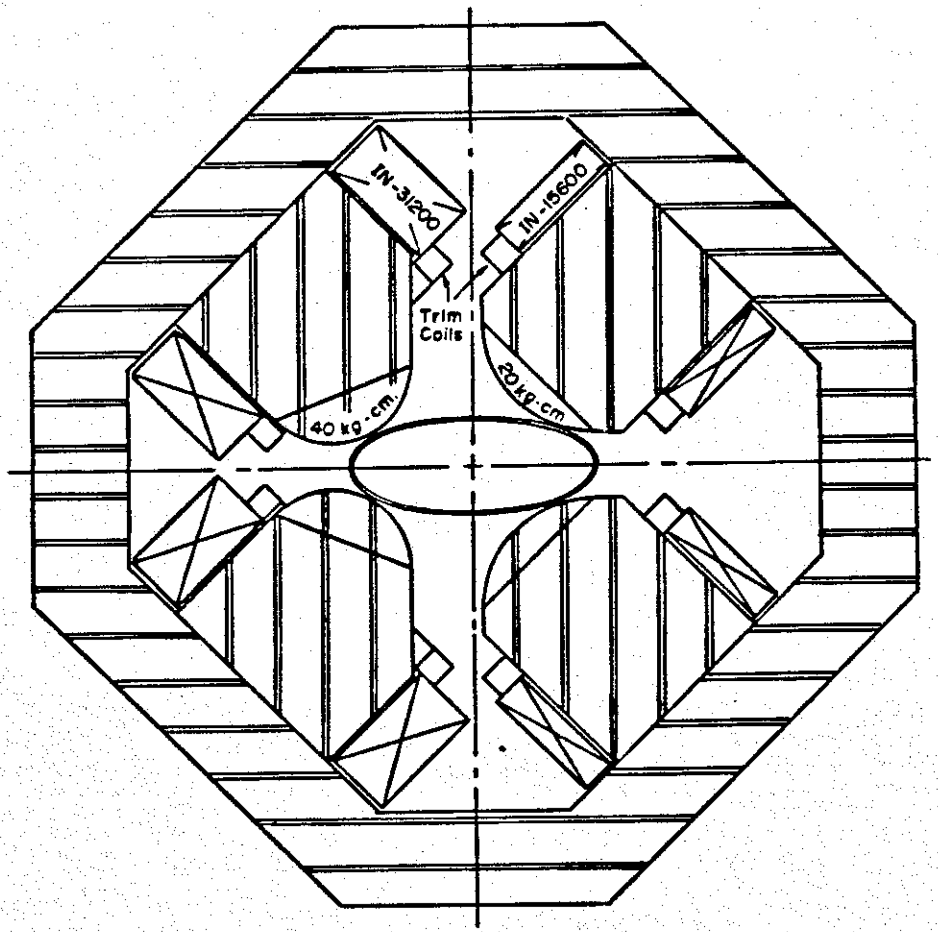

Figure 14. An example of a multipole where the higher-order terms produce strong perturbations on the normal quadrupole contours. In this case the ampere-turns are also different between the left and right pole pairs. The fields at the nominal aperture radius $R = 10$ cm are $BQ = 8.40$ kG, $BH = -3.40$ kG, $BO = 1.56$ kG, and $BD = 0.60$ kG.

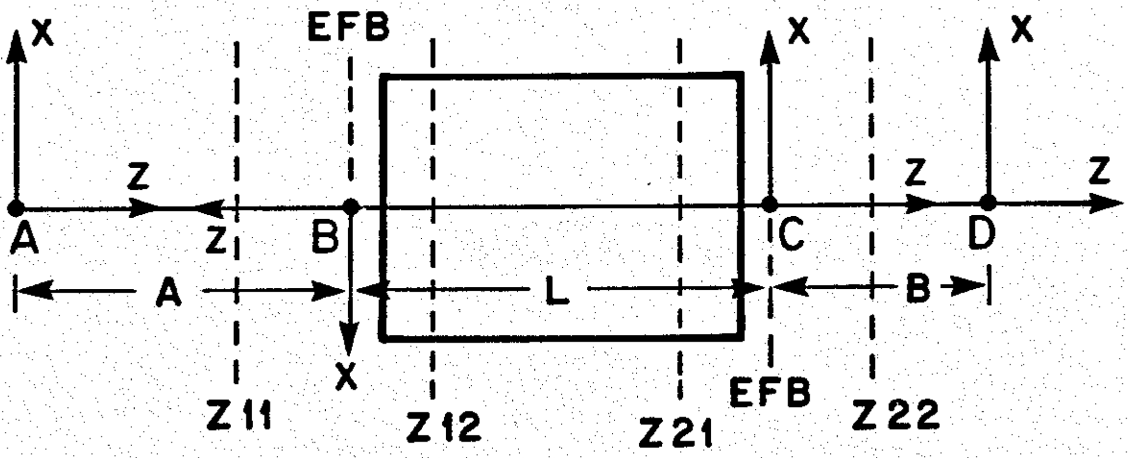

Figure 15. Coordinate systems used in subroutine POLES.

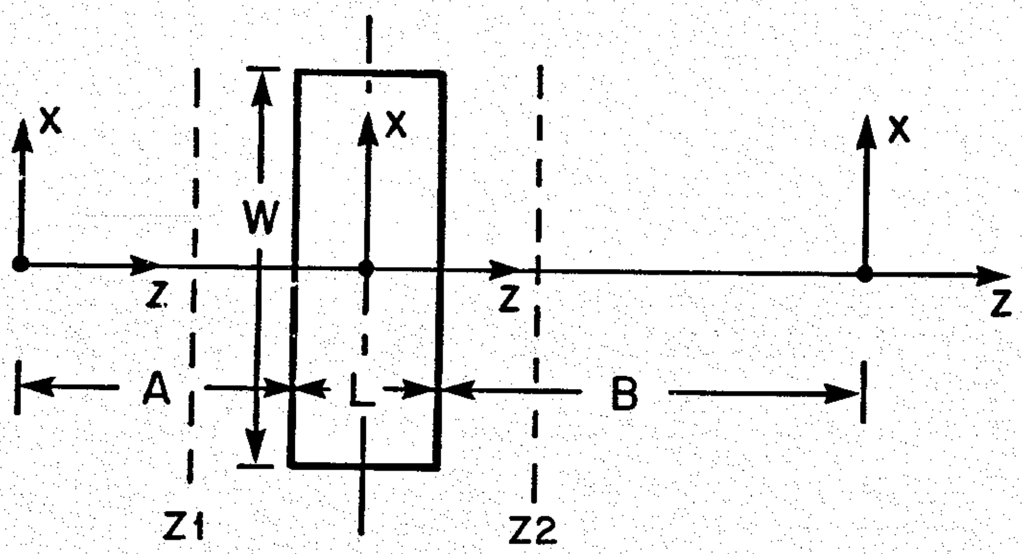

Figure 16. Coordinate systems used in subroutine MULT (Multipole Corrector).

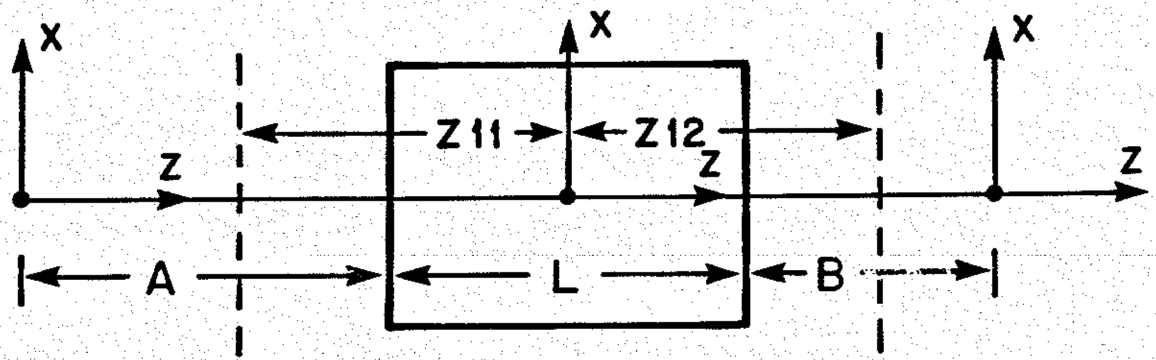

Figure 17. Coordinate systems used in subroutine SOLENOID. Note: in this case L is the physical length of the solenoid, i.e. the concept of an effective-field boundary is not used.

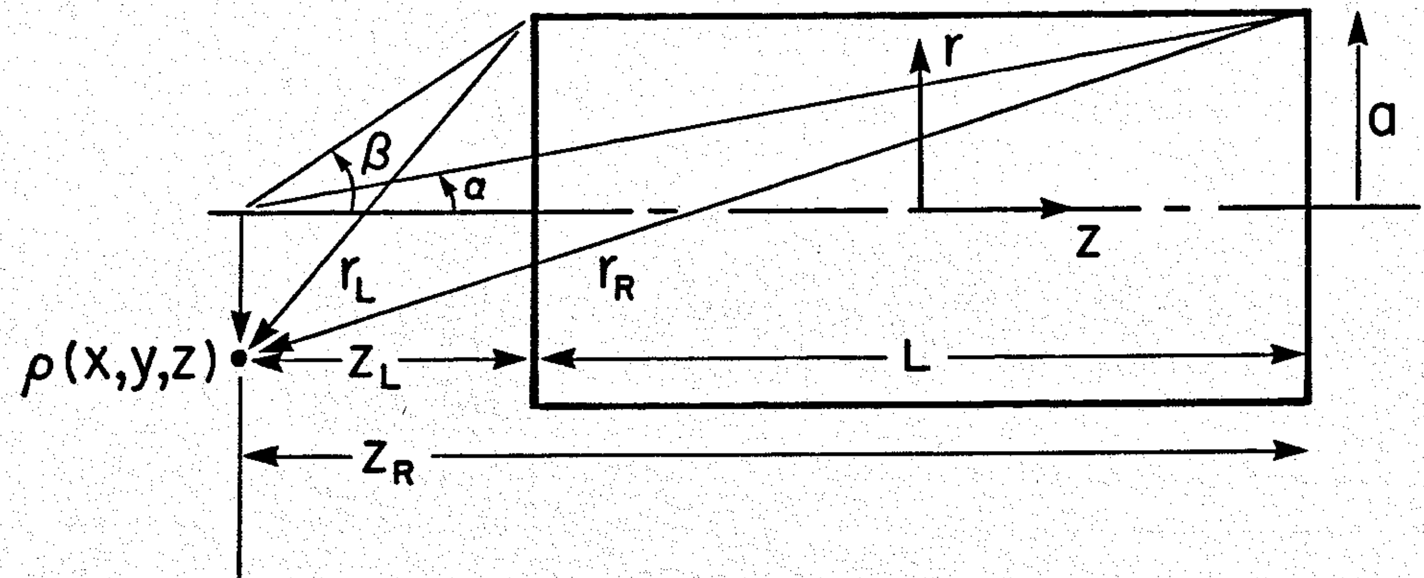

Figure 18. Geometry used in calculating the field of the solenoid.