Abstract

Resistive Plate Chambers (RPCs) are gaseous parallel plate detectors with good time resolution and high efficiency, making them attractive for trigger and Time-Of-Flight applications. Although, RPCs invented in 1980s, experimental and theoretical studies of RPCs is still under consideration at the present time. In this seminar we present a dynamic simulation based on the simultaneous solution of the transport equations for the electronic and ionic species, together with the poisson equation. The model can predict well the avalanche, saturated avalanche and streamer mode of operation of RPCs, together with the space charge field. Also the existence of a signal precursor to breakdown in RPC will be shown by the model. The results are in a good agreement with measurements and can reconstruct some results of other models.