

Figure 1: Definition of the kinematical quantities relevant for the large-angle scattering experiment of Rutherford. The picture depicts the large-angle deviation due to a single atom. The impact parameter is b (before the collision) and the resulting scattering angle is  $\theta$ . The position of the  $\alpha$  particle along its trajectory is given by  $(r,\alpha)$ . The distance of closest approach is defined by DCA along an axis z'.