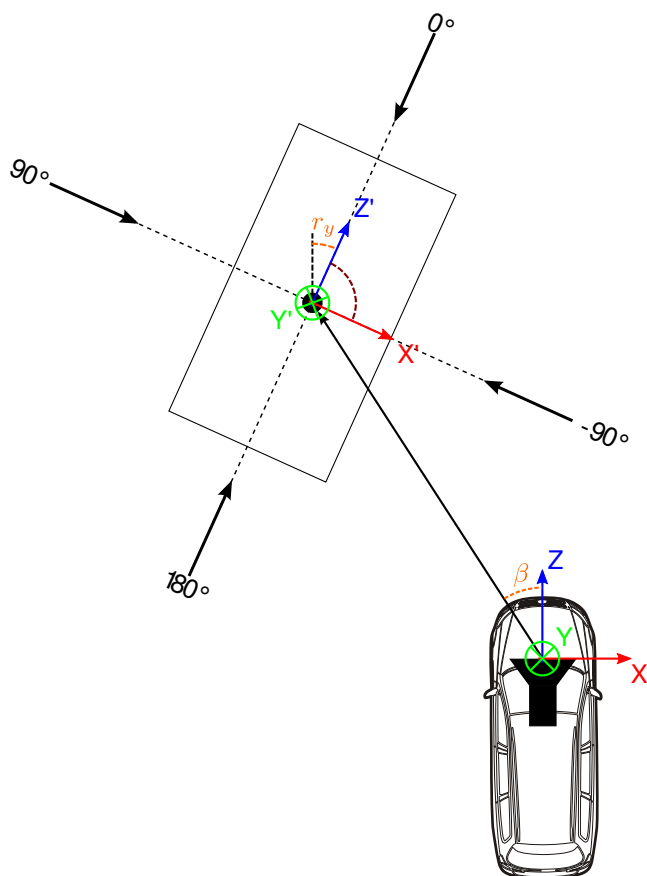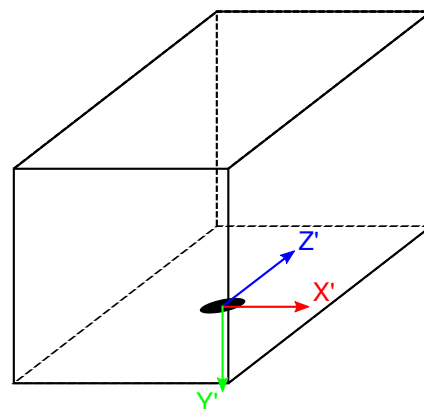# KITTI Object Detection and Tracking Geometry Definitions

Top View Car and Object Coordinate System

Perspective View Object Coordinate System

Object Coordinate System $(X', Y', Z')^T$

Camera Coordinate System $(X, Y, Z)^T$

Object Orientation r_y

Object Observation Angle

$$\alpha = -[(\pi + r_y) + (\pi + \beta)]$$

Definition of the Observation Angle