

COMPUTAÇÃO GRÁFICA



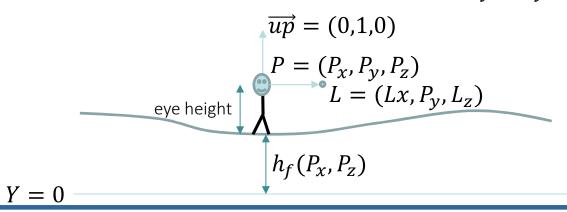
Camera Control

First person camera on a terrain



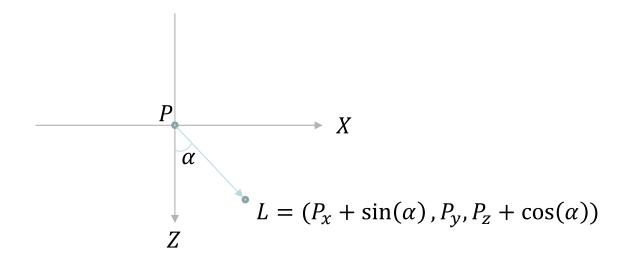
Camera Placement

- Consider gluLookAt parameters:
 - P: camera position; L: "look at" point; \overrightarrow{up} : up vector
- The P_y value of the camera position is taken directly from the terrain height + the height of the "user" eyes.
 - Use function hf(x,z) $P_y = eye\ height + hf(P_x,P_z)$
- ullet Assume that the user is always looking in an horizontal direction. $L_{oldsymbol{y}}=P_{oldsymbol{y}}$





Camera Orientation





Forward/Backward Motion

$$P$$
 P' L L

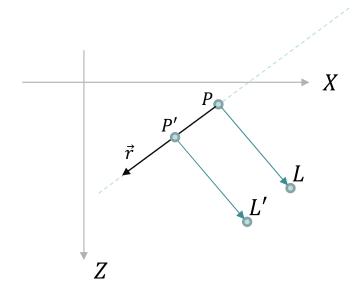
$$\vec{d} = L - P = (L_x - P_x, 0, L_z - P_z)$$

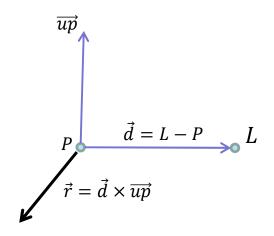
$$P' = P + k\vec{d}$$

$$L' = L + k\vec{d}$$



Camera Lateral Motion





$$P' = P + k\vec{r}$$

$$L' = L + k\vec{r}$$



Assignment

- Complete last week's lesson;
- Add first person camera to the project.