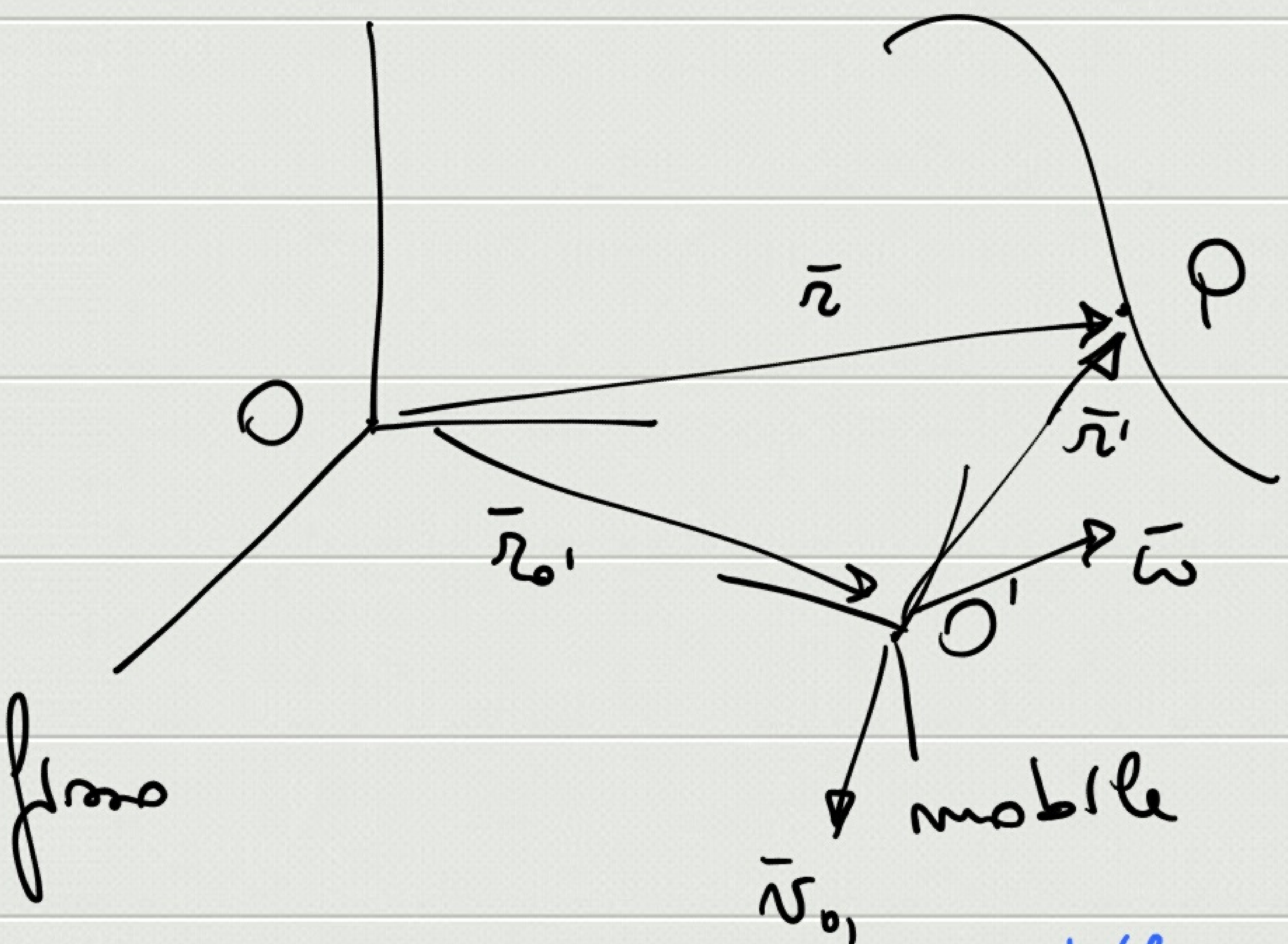
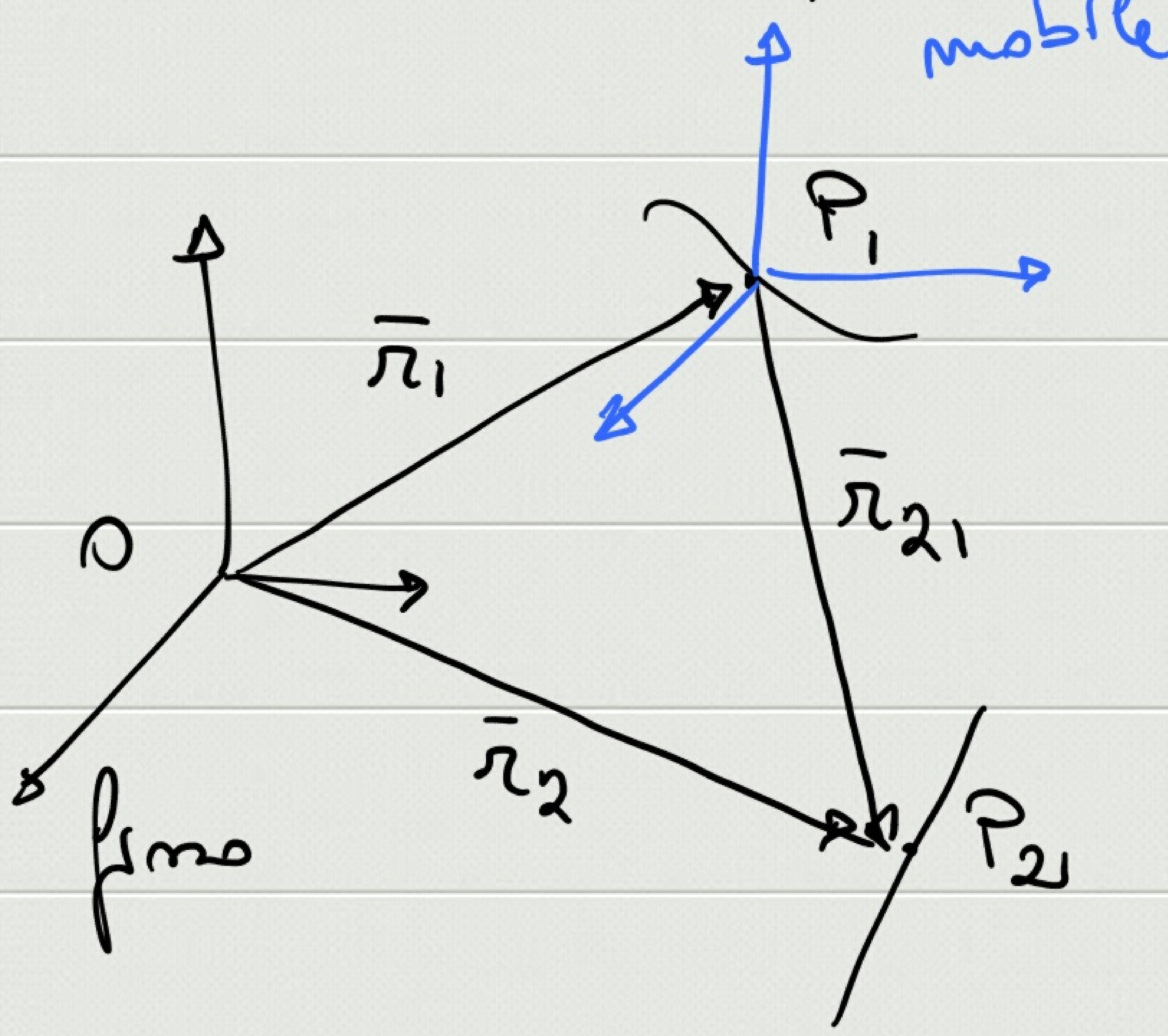



$$\bar{r} = \bar{r}' + \bar{r}_{O'}$$

$$\bar{v} = \bar{v}' + \dots$$

$$\bar{a} = \bar{a}' + \dots$$




$$\overline{P_1 P_2} = \bar{r}_2 - \bar{r}_1 = \bar{r}_{21}$$

$$\omega = 0$$

$$\bar{v}_{O'} = \bar{v}_1$$

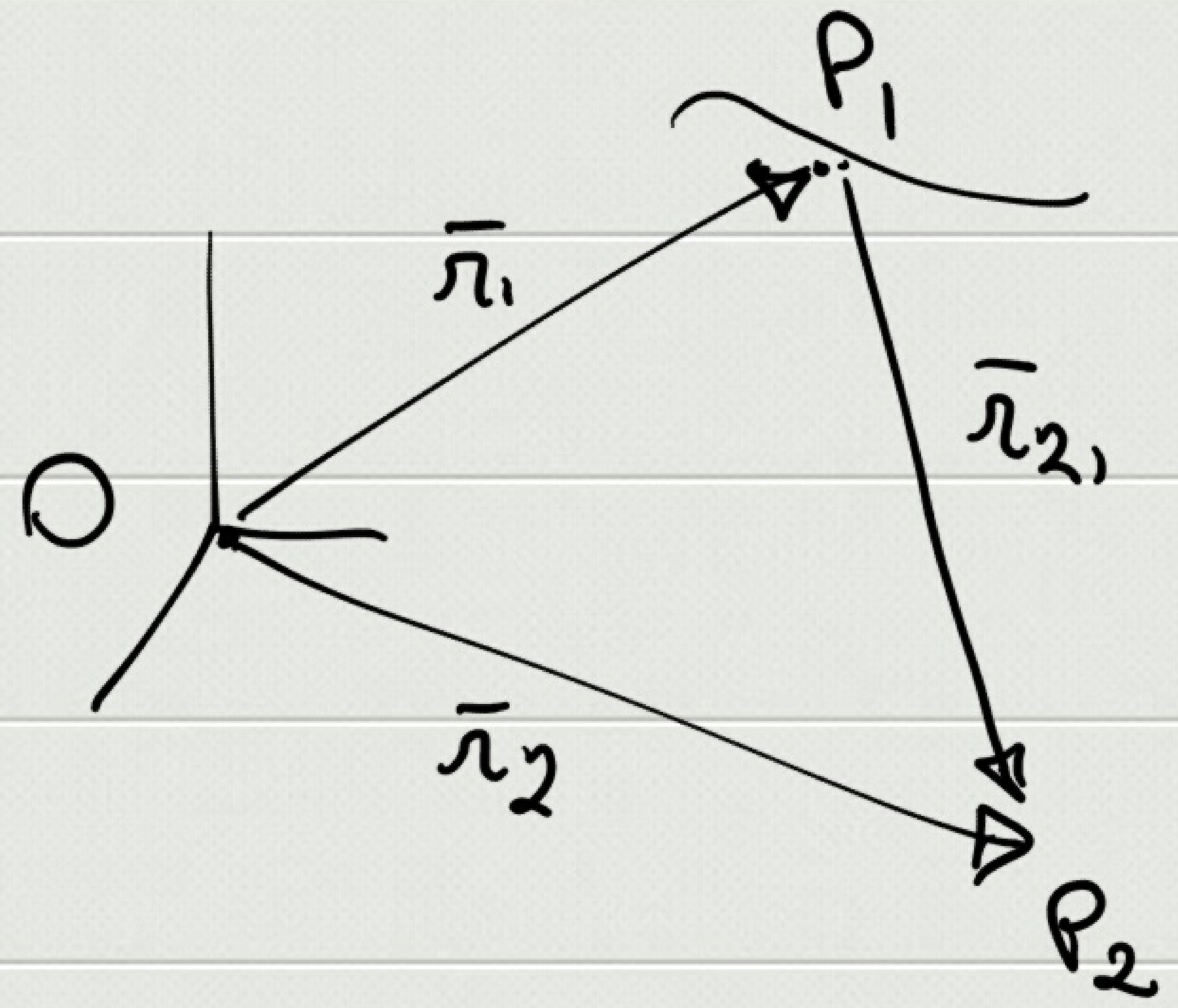
$$\bar{v}' = \bar{v} - \bar{v}_{O'} - \bar{\omega} \times \bar{r}' \Rightarrow \boxed{\bar{v}_{21} = \bar{v}_2 - \bar{v}_1}$$

$$\bar{a}' = \bar{a} - \bar{a}_{O'} - \bar{\omega} \times (\bar{\omega} \times \bar{r}') - \frac{d\bar{\omega}}{dt} \times \bar{r}' - 2\,\bar{\omega} \times \bar{v}'$$

$$\Rightarrow \boxed{\bar{a}_{21} = \bar{a}_2 - \bar{a}_1}$$

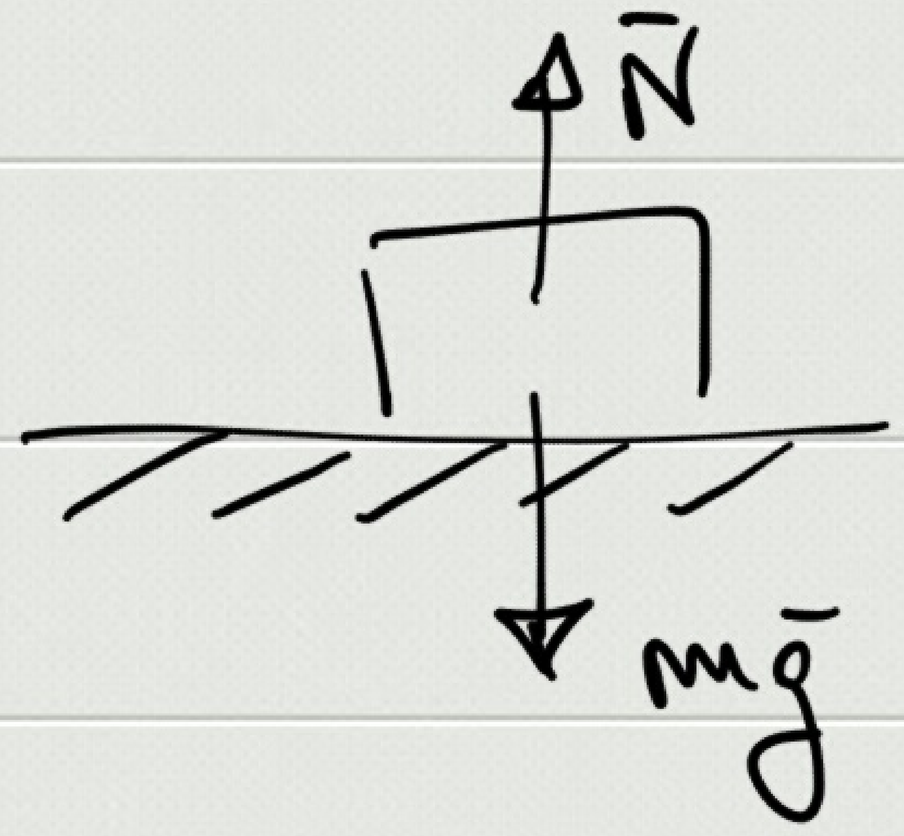
$$\bar{v}_{21} = \frac{d}{dt}(\bar{r}_{21}) = \frac{d}{dt}(\bar{r}_2 - \bar{r}_1) = \frac{d\bar{r}_2}{dt} - \frac{d\bar{r}_1}{dt} =$$

$$= \bar{v}_2 - \bar{v}_1$$

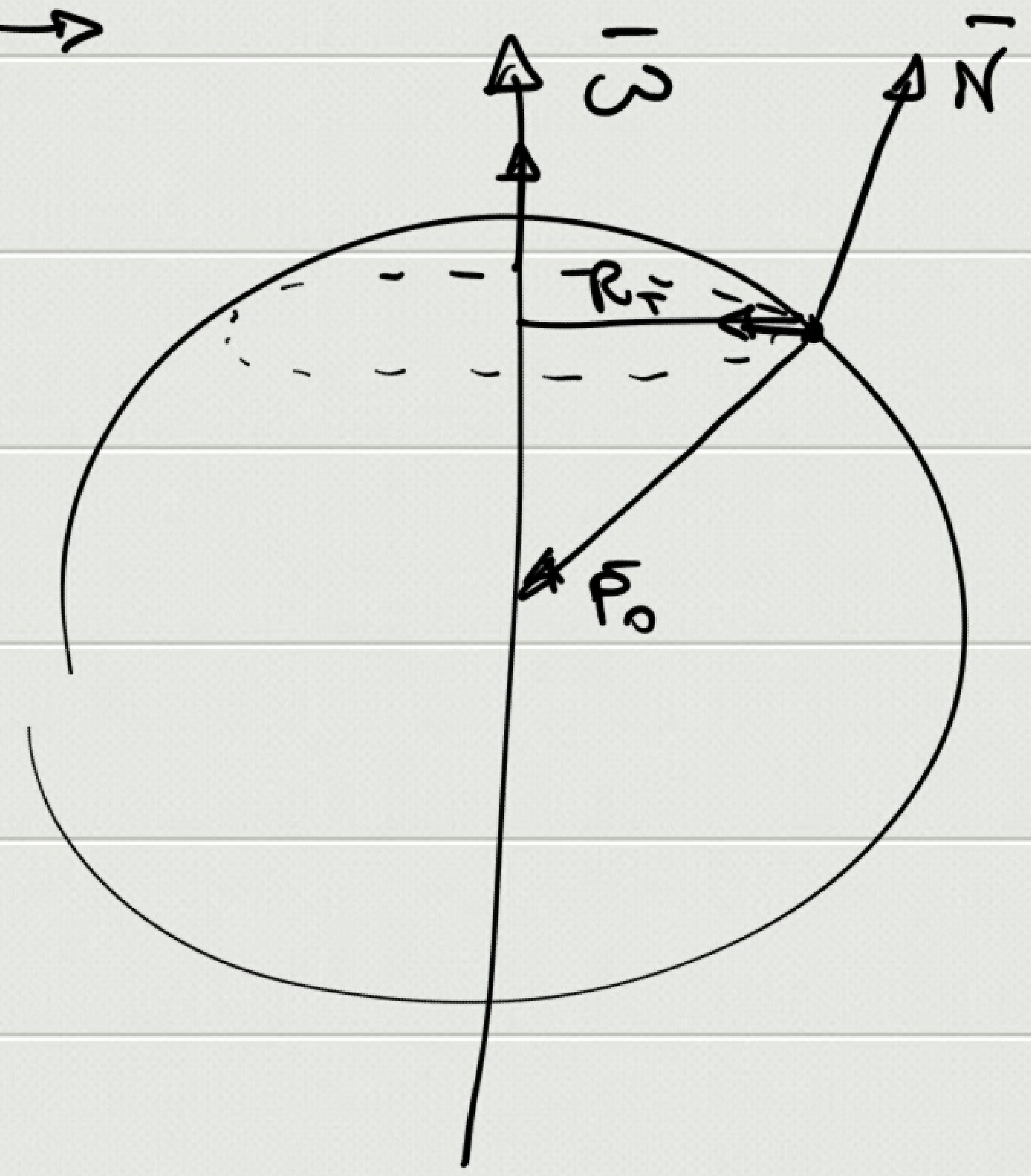


Sistema di riferimento <u>inerziale</u>

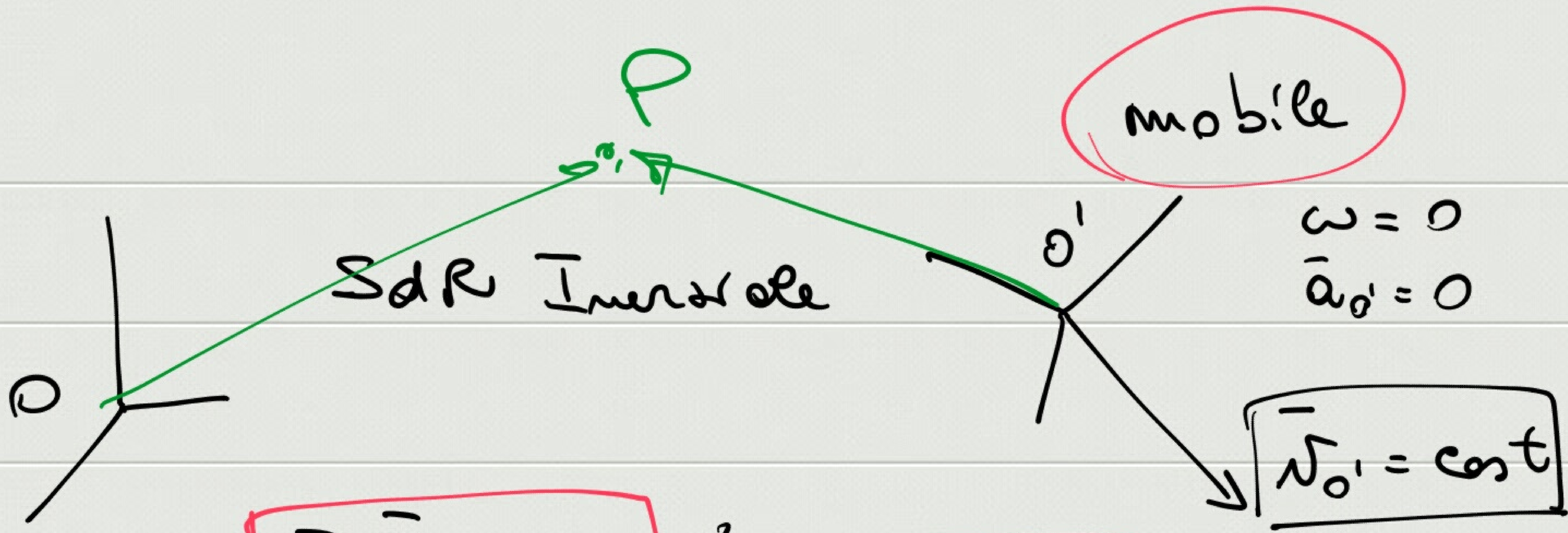
se vale <u>principio di inerzia</u>




$$\left.\begin{aligned} \sum_i \bar{F}_i &= m\bar{a} \\ &= \bar{N} + m\bar{g} \end{aligned}\right\} = 0$$


$$\bar{P}_0 + \bar{N} = m\bar{a}_N$$




$$\left.\begin{array}{l}\boxed{\sum_i \bar{F}_i = 0} \\ \quad\quad \stackrel{!}{=} m\,\bar{a}\end{array}\right\} \Rightarrow \boxed{\bar{a} = 0} \qquad (*)$$

$$\boxed{\bar{a}' = \bar{a}} \left(\cancel{+\,\bar{a}_{O'} + f(\bar{\omega})}\right)$$

$$(*) \Rightarrow \bar{a}' = 0$$

$$\boxed{\sum_i \bar{F}_i'} = \underline{m\,\bar{a}' = 0}$$

Dato un SdR I $\Rightarrow$ ogni altro SdR mobile $\boxed{\bar{v}_{O'} = \text{cost}}$ è SdR I