

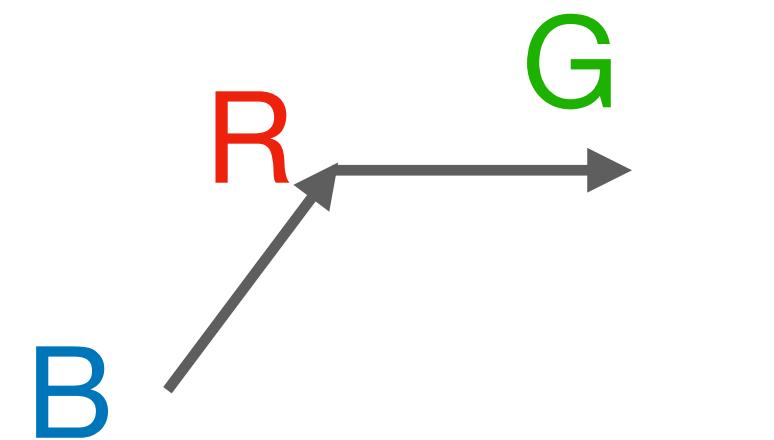
## Geometric Priors : Joint angle Loss

$$\mathcal{L}_{\text{ang}} = 1 - \cos(\theta_{\text{pred}} - \theta_{\text{gt}})$$

Ensure that relative orientation of points is correct

## Geometric Priors : Smoothness Loss

$$\mathcal{L}_{\text{smooth}} = \frac{1}{|\mathcal{V}|} \sum_{(n,t) \in \mathcal{V}} \| \mathbf{p}_{n,t+1} - 2\mathbf{p}_{n,t} + \mathbf{p}_{n,t-1} \|_2^2$$



$$(p_2 - p_1) - (p_1 - p_0)$$

Second finite  
difference

Penalizes abrupt change in velocity