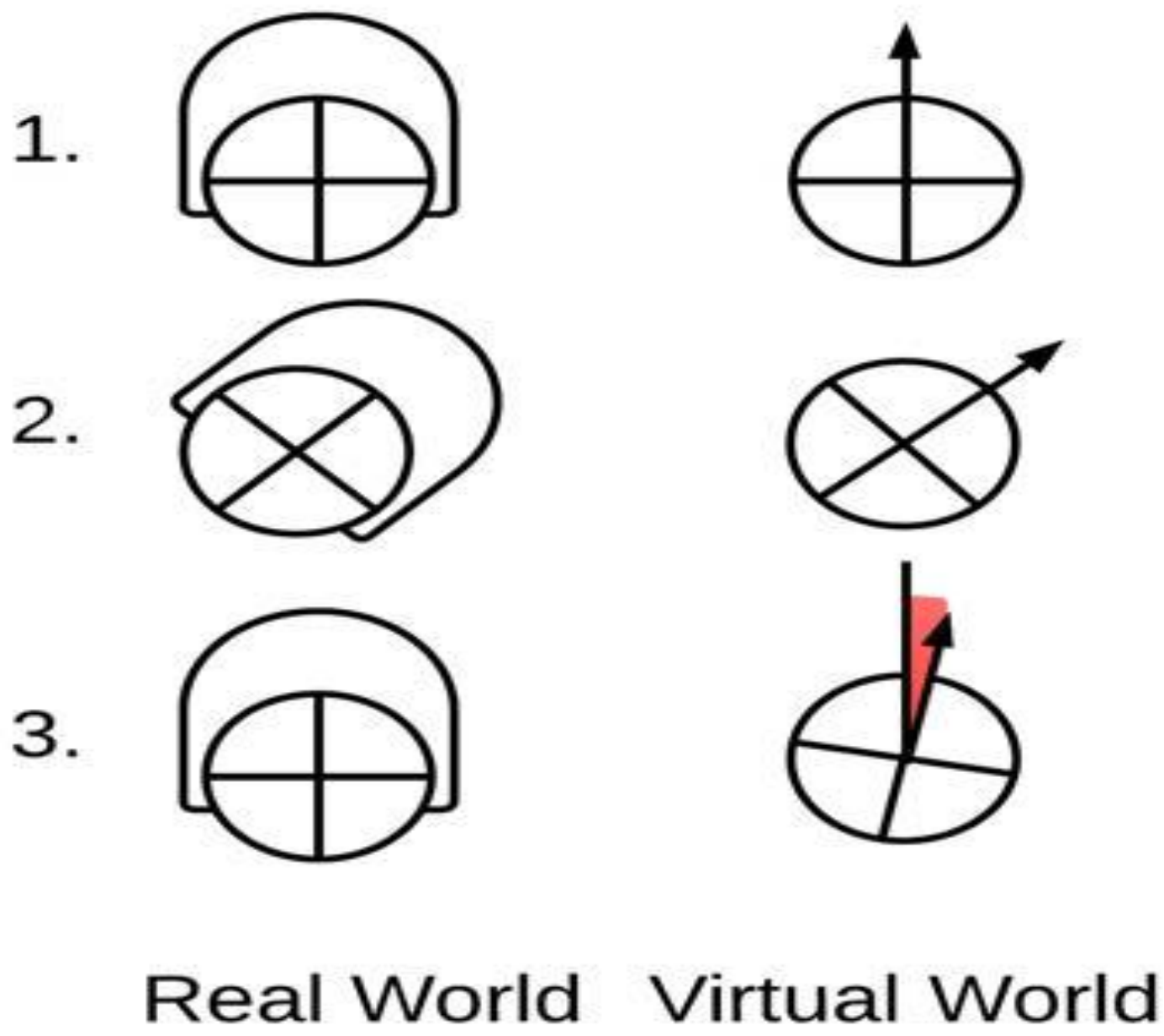


Correcting User's Head and Body Orientation Using a Comfort Pose Function

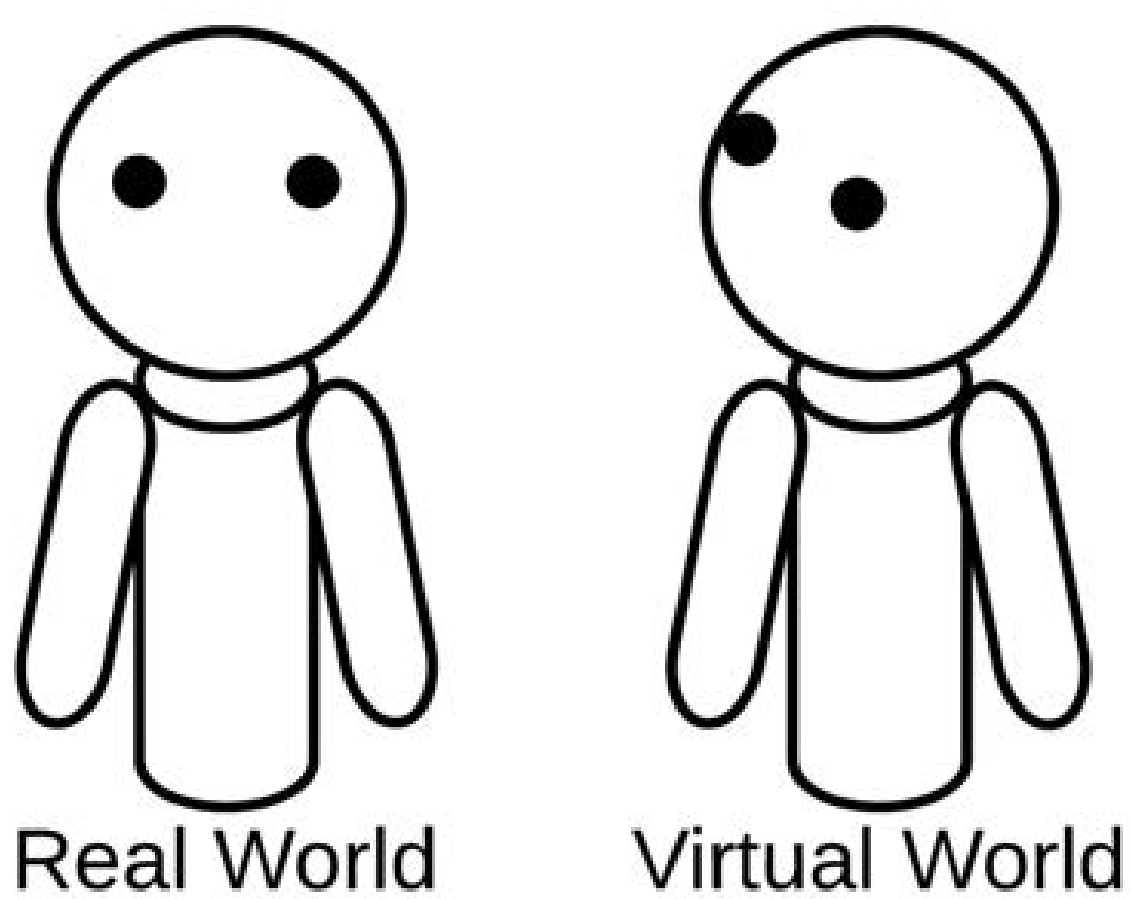
Autor : Márcio Mello da Silva
Orientadora: Luciana Nedel



PROBLEMS



- Cumulative errors causes drift in the virtual environment



- Head body misalignment caused by poor body tracking system.



- Head mounted displays (HMD) are susceptible to drifting.
- Drifting is a problem when head position tracking is not available.

PROPOSED SOLUTION

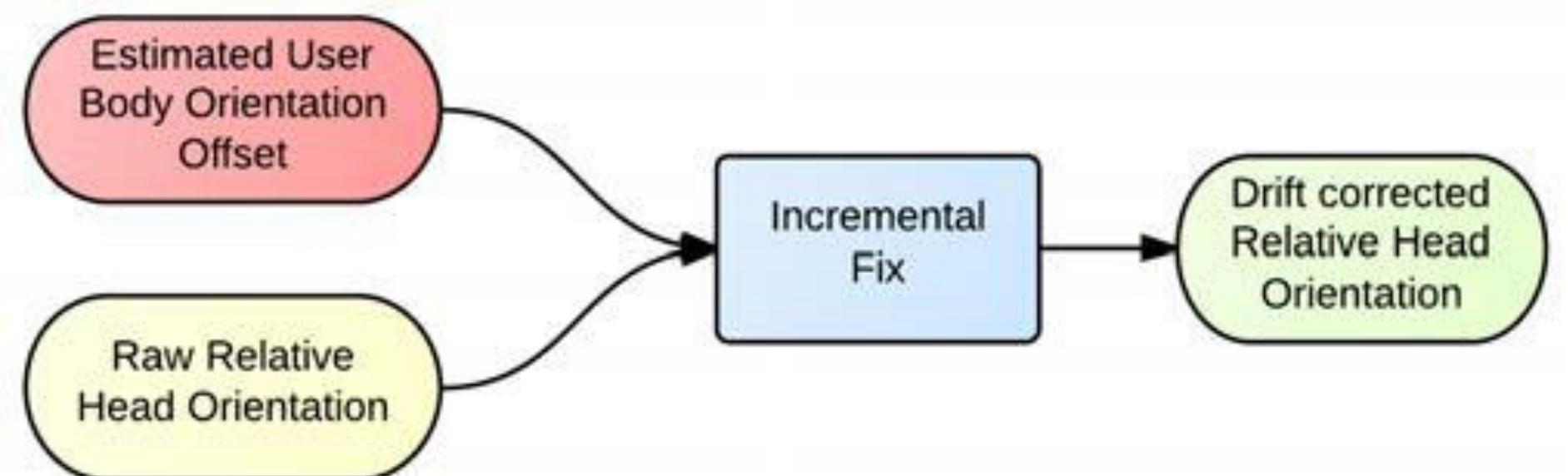
- To solve these problems we propose the Comfort Pose Function.

Assumptions

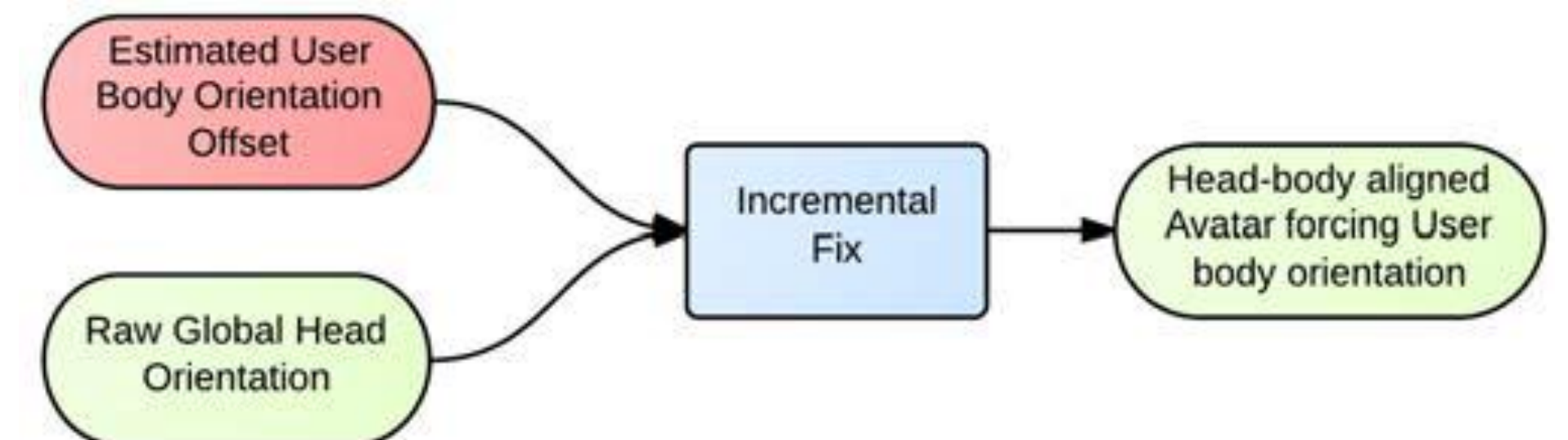
- Humans maintain their head facing forward most of the time (comfortable pose).
- If the mean orientation in a given interval is not forward then it may be a drift.

Algorithm overview

- Using the orientation information and the comfort pose hypothesis, we can estimate the User-Body Orientation Offset (drift).

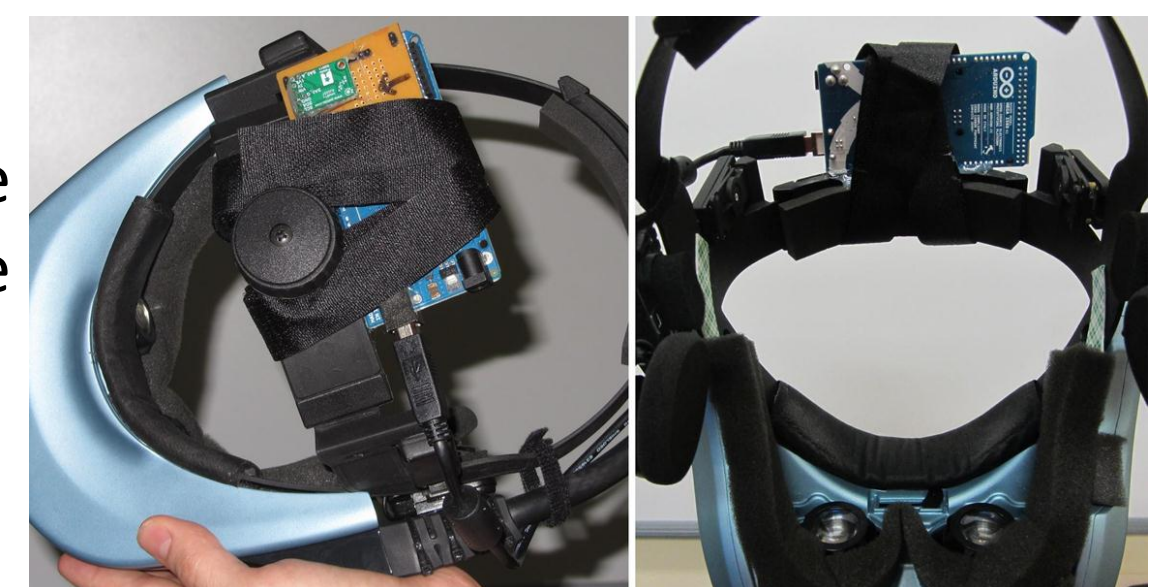


- Avatar's head direction will be incrementally fixed according to the estimated drift.



Tests

- We measured the same movements with HMD and the arduino with global orientation



Results

- Tested in simulator.
- Less misalignment perceived.
- Less discomfort.



MODALIDADE DE BOLSA

CNPQ