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## **JO 2024 : La réalité virtuelle pour caractériser les habiletés d'anticipation des relayeurs 4x100m**

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## Aim

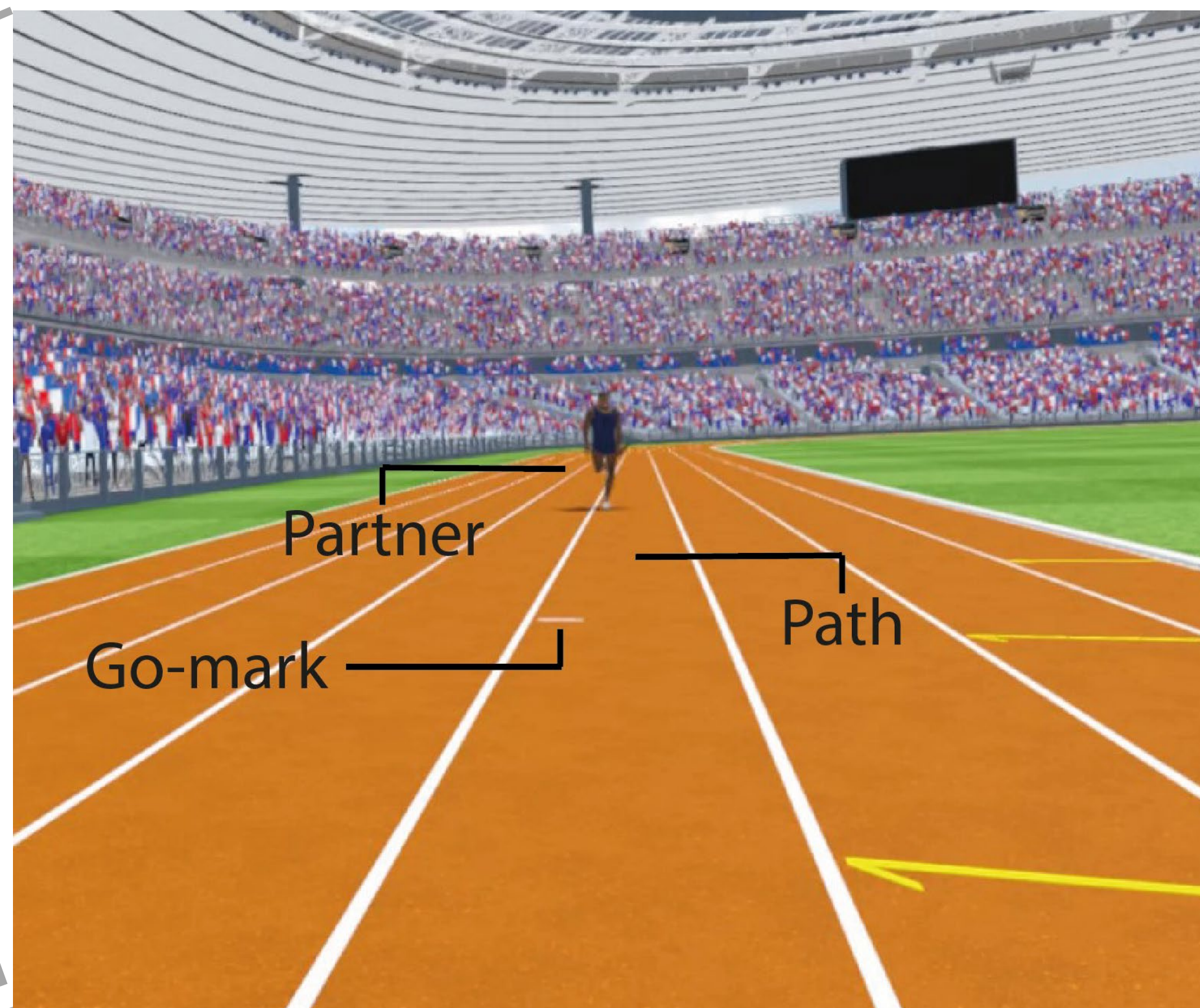
Achieve a better understanding of the perceptual-motor processes allowing athletes to synchronize their displacements during the transmission of the relay baton.

## Task

The receiver must initiate his/her run by lifting his/her foot when the partner passes over the go-mark in the lane.



Starting position



Visual scene projected in VR headset



lifting the foot

## Population

Nineteen athletes of French national teams (12 men and 7 women)

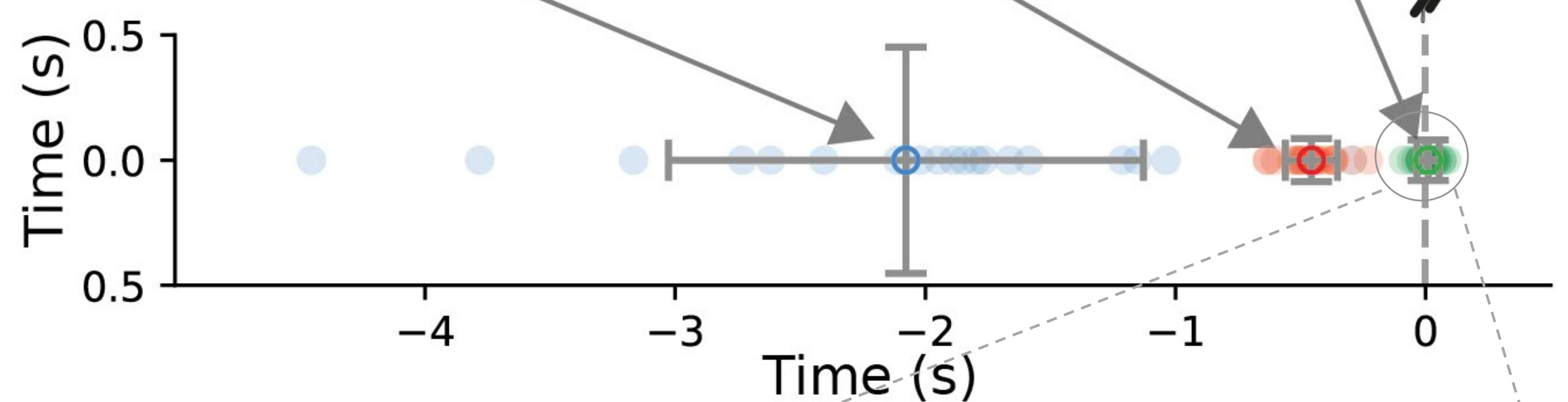
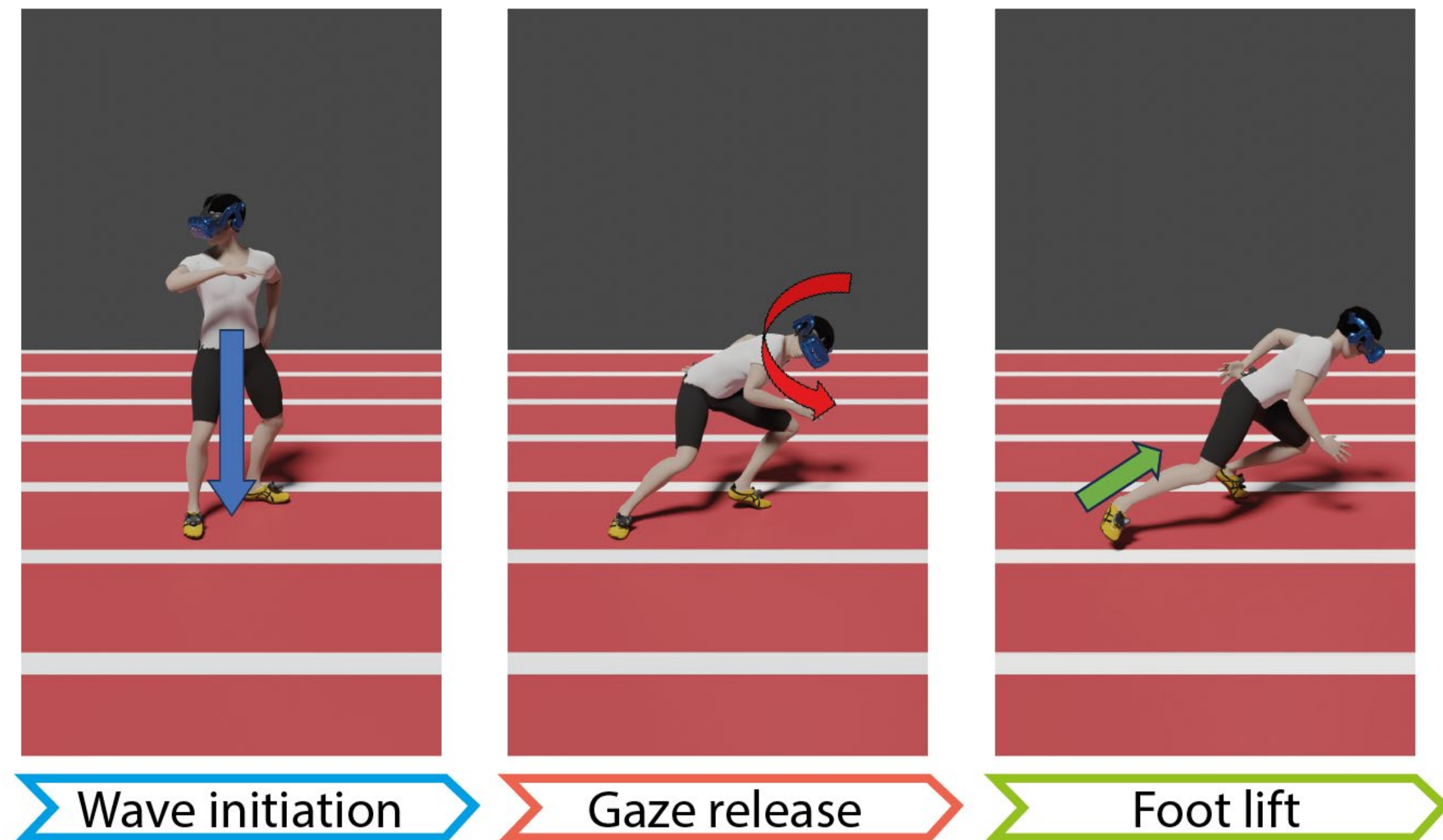


## Material

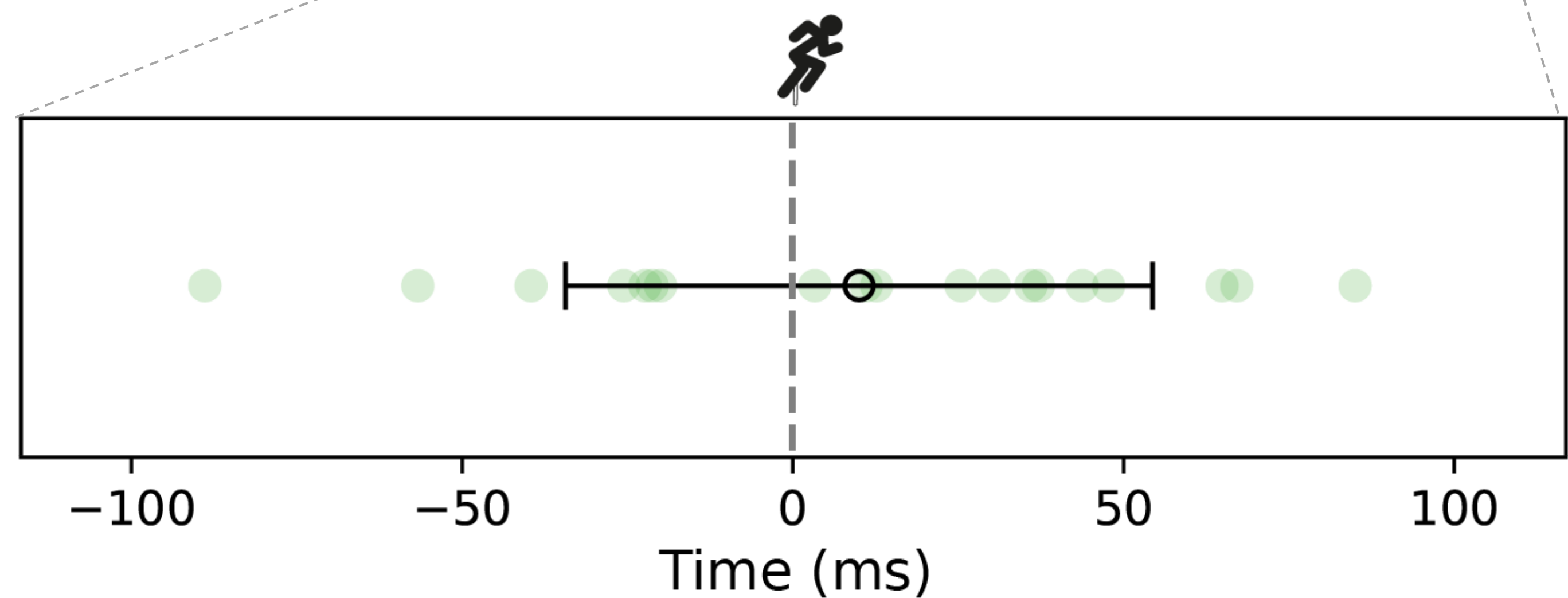


## Results

Representation of kinematics sequence preceding the foot lift

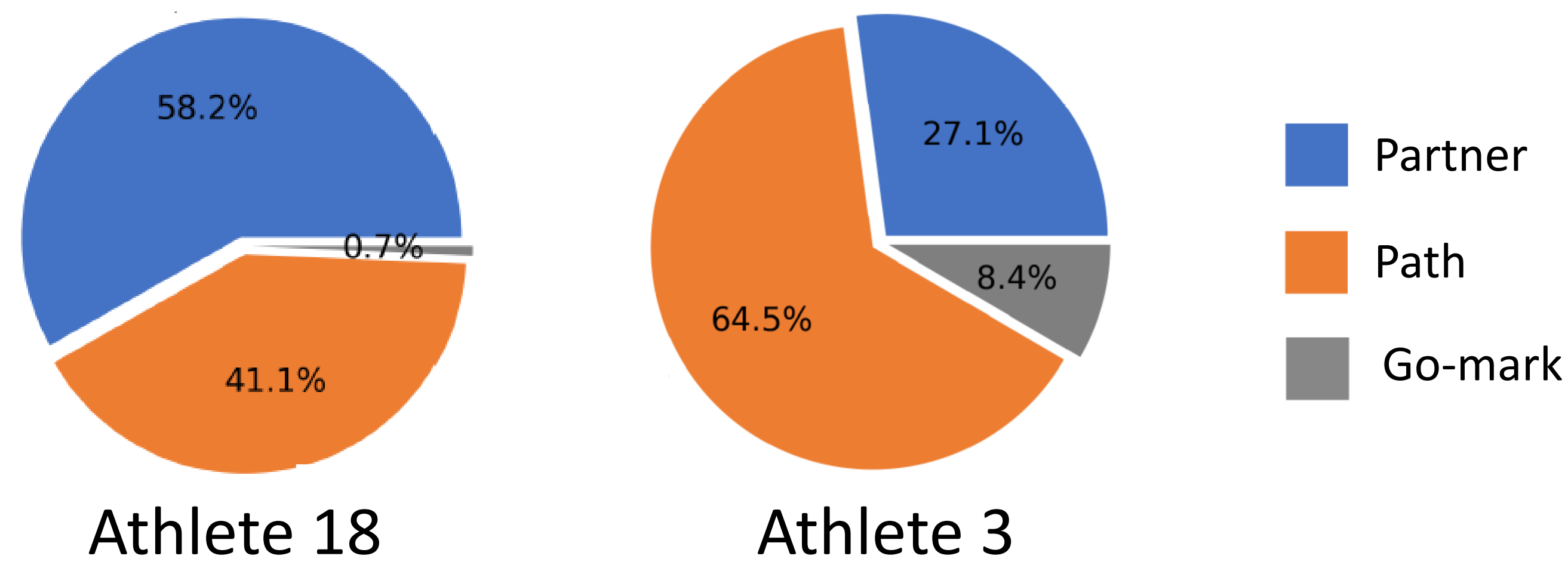


Results show a significant reduction in the variability of motor events preceding the start



Mean foot lift error shows a good level of performance given the high spatio-temporal constraints of the tasks (79% of athletes are below 80 ms of mean absolute error)

Visual strategies of two athletes highlight the between athletes variability



## Discussion

- Variability (both between athletes and within athlete) decreases during the unfolding of the action
- The heterogeneity of the behaviors must be linked to the specificities of the athletes
- This study supports the importance of regulation processes which, for the best athletes, lead to maximum final stability

## Conclusion

This innovative study sheds a first light on the anticipation skills that allow expert athletes to synchronize their movement when passing the baton