Equinomath

Improving horses performance through tracking and optimization

H2020 SOCIETAL CHALLENGES: Health, demographic change and wellbeing
PRODUCTIVE SECTOR: Electronics

PROBLEM DESCRIPTION

McLloyd tracker provides accurate speed and position estimates of horses in a race. How could these data be useful to improve selection and training?

CHALLENGES AND GOALS

The aim is to provide a profile of the best strategy for a fixed distance, to understand the effects of changes in altitude and curves on the track. For each type of race, we determine the best horses profiles.

MATHEMATICAL AND COMPUTATIONAL METHODS

McLloyd's miniaturized tracker provides data on all the parameters of the horses running a race. Combined with two physics principles (energy conservation and Newton's second law), a solver computes the global optimal strategy for horses on a fixed distance. Small perturbations on the tracks (bending or slope) may lead to drastic changes on the optimal solution. The race is then reconstructed in virtual reality and various combinations may be tested.

3D / AR / VR   HORSE TRACKING   SECTIONNAL TIMING

OVERLAY TV TEMPS-REEL
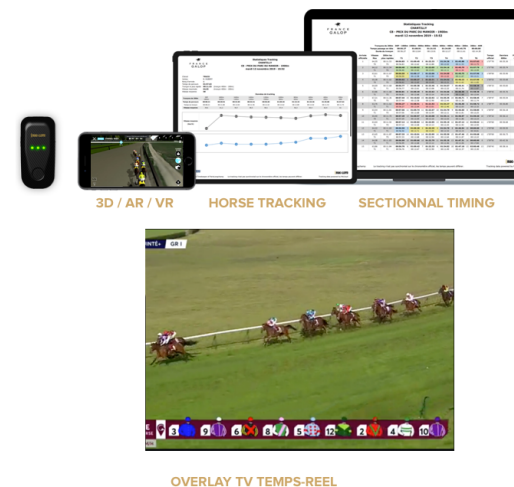
The data recorded by the McLloyd tracking device allow to live the race in virtual reality

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Results and Benefits

Once we have the tracking data for a horse on a race, we compute realistic imaginary races on other tracks using optimization techniques. This should help to determine on which race to enter a horse. The project was supported by AMIES who allowed to hire an engineer.

Improve horses performance

The tracking device together with the mathematical model allow to improve races strategy and horse training.

Digital Twin

Centre d'Analyse et de Mathématique Sociales (CAMS) CNRS & EHESS (Paris)

McLLOYD
ACCURATE OR NOTHING

McLloyd