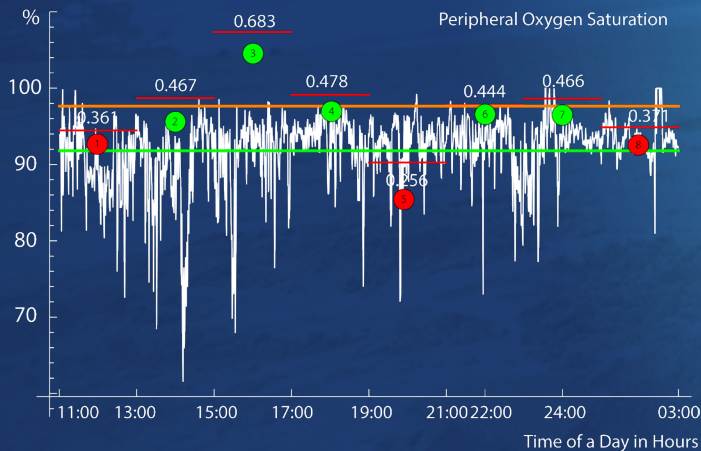# Cassiopée Sport

Data and their Collection

Recently and thanks to the new digital technologies, training monitoring has become increasingly popular in the world of sports. A lot of parameters are described as useful to track in order to achieve an efficient athlete- and performance-oriented training monitoring. The choice of the adequate parameters depends on the sport-specific context, the goal of the monitoring program as well as on the available means and resources. We analyze both objective and subjective data to achieve these goals.

Cassiopée Sport Platform

The Geometric Athletic Performance Index (GAPI) is a combination of external (e.g.,distance) and subjective data (e.g., mood ditortion). GAPI is the most appropriate one to monitor training and recovery monitoring among athletes. Moreover, this training monitoring system is able to predict at any week during the whole season if an athlete is located in the positive or in the negative predictive area of performance. Last but not least, GAPI indicates athletes and coaches which parameters can be modified in order to reach the positive predictive performance area.
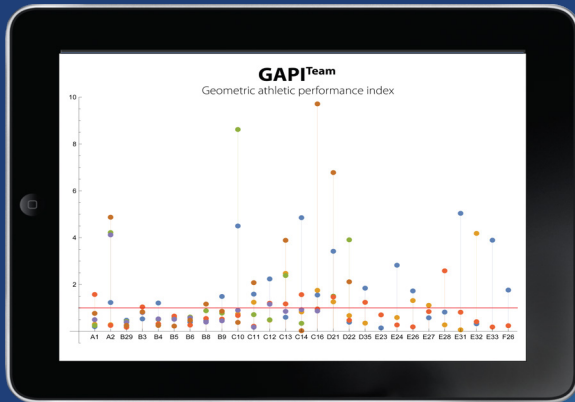

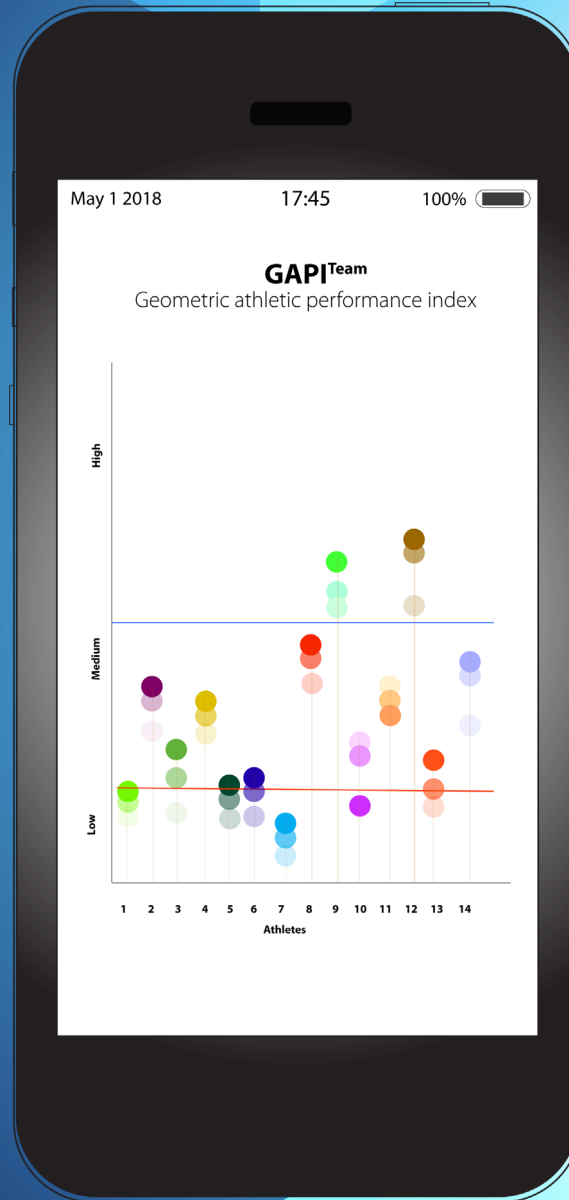Peripheral Oxygen Saturation

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Cassiopée^{Sport}

Cassiop**ée**^{Sport}

Artificial Neural Networks Analyses

We implement an innovative Artificial Intelligence-based monitoring system of several training and recovery parameters assessed regularly during certain number of weeks. The result is a complex snapshot of performance, improvement and injury avoidance individualized to each athlete.

Performance Analyses

A Coach View

We use an Artificial Intelligence-based monitoring system of several training and recovery parameters assessed regularly during a number of weeks. Athletes provide both objective and subjective data. We consider different parameters combinations for which we use Ar tificial Neural Networks geometric optimization to construct separation hyperplanes representing a positive and a negative predictive performance area. To better understand the outcome of the complex graphs obtained, we introduce the Geometric Activity Performance Index (GAPI) defined as the ratio of the positive and the negative predictive performance. .

GAPI^{Team}
Geometric athletic performance index

A1 A2 B29 B3 B4 B5 B6 B8 B9 C10 C11 C12 C13 C14 C16 D21 D22 D35 E23 E24 E26 E27 E28 E31 E32 E33 F26

May 1 2018   17:45   100%

GAPI^{Team}
Geometric athletic performance index

High

Medium

Low

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Athletes

high

medium

low

Satisfaction Recovery Physical Emotion Well being Health