Canadian Sport Institute Pacific Projects

Sept 26, 2017
Rowing Gold Medal Standard (GMS)

- Create gold medal winning time standard for all boat class
- Data: competition date, winning time, boat class from 20yrs of world championships (or more)
- Questions:
  - Determine GMS for each boat class taking into account of environmental factors
Rowing Pacing Strategies

- Race distance: 2000m
- Data: speed and stroke rate (SR) at every 50m
- Question:
  - Objectively determine different types of race strategies
  - Do boats that win or race well use a certain type of strategy or no difference compared to boats that don’t do well?
  - Can look at strategy difference between sex, boat size, age categories, sweep/sculling, ....
  - For boats that go out very fast, what is the risk of it blowing up? What is the penalty for starting faster than optimal start speed?
Cycling testing protocol

• Test duration = 3min
• Data: n=70, time and power collected at 6Hz
• Calculated parameters:
  • CP = average of last 30s power output
  • $W'$ = area bounded by CP and curve
  • R (resiliency) = standard deviation of the CP divided by CP
• Questions:
  • What model can estimate CP & $W'$ (& R?) accurately?
  • How short can one make the test while still accurately estimate CP & $W'$? Maybe R?
Soccer fatigue metrics

• Determine fatigue within a game and tournament
• Data: 88 variables collected at 100Hz (speed, xyz acceleration, xyz gyro, HR, HR@diff zones...)

• Question:
  • Can we determine fatigue based on these metrics?
  • How does it compare to some of the fatigue fitness model in the literature? Does your model perform better?
  • Compare to a recent model, W’ reconstitution model
RBC Training Ground

• Identifying next Olympian
• Data: anthropometric, 8 preliminary tests (triple jump, single leg jump, peak power, pull up, push up, arm/leg bike), 4 final tests (40m sprint, bench pull, leg press, jump)

• Question:
  • Predict who will be selected based on the prelim tests
  • Predict who will be selected based on the final tests
  • From those who made the team and did the RBC training ground event, compare their test results with those being selected to comment on the validity of the testing or coaching selection criteria