

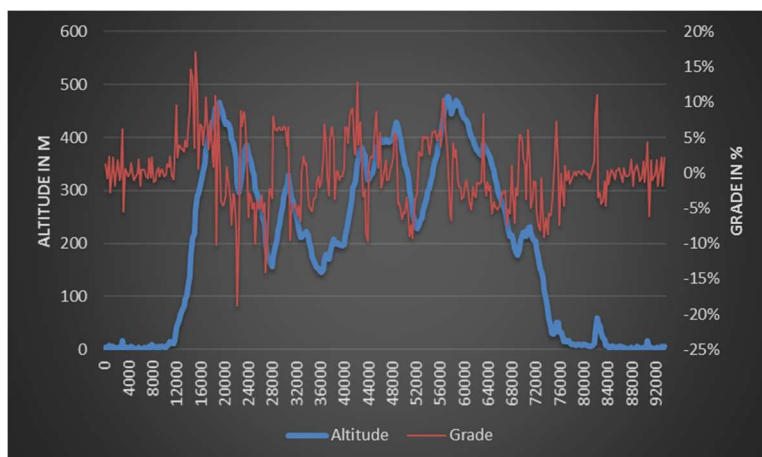


CASE STUDY

TRIATHLON CANNES – SEBASTIAN KIENLE

THE COURSE

The bike course of the Triathlon in Cannes, which has taken place in April 2017 is a hard one: some flat kilometres in the beginning and then a steady up and down followed by some flat kilometres at the end of the course: 95km and 1500m difference in altitude.



MODELLING

We have modelled the winner Sebastian Kienle (73kg, 1.80m) as he decided – due to the profile of the road course – not to use his time trial bike Scott Plasma (8.9kg) but his Scott Foil with extensions (6.9kg).

Cycling Power Catalyst
provides MS Excel
based analysis
applications:

- Power to Speed
- Course to Speed
- Simple Calculator
- CdA Estimation

www.cycling-power-catalyst.ch



	1 (Basis)	2	3	4	5
Drag coefficient CdA	0.25	0.29	0.29	0.29	0.29
Rolling resistance coefficient	0.005	0.005	0.005	0.005	0.005
Drive and slip loss Cm (%)	3%	3%	3%	3%	3%
Weight bike (kg)	8.9	6.9	6.9	6.9	6.9
Weight rider (kg)	73	73	73	73	73
Constant power	370	370	370	370	370
Height above sea level (m)	200	200	200	200	200
Temperature	20	20	20	20	20
Wind (km/h)	0	0	0	0	0
Wind direction (degree)	250	250	250	250	250

RESULTS

Distance in m	93'664				
Total Time	2:26:31	2:30:19	2:30:19	2:30:19	2:30:19
"Best" Race Set	2:26:29				

The time trial bike is – despite the uphill sections – superior to the road bike with extensions, because the uphill sections are not steep enough that the lower weight of the road bike makes a difference. This can be seen from the sector analysis:



There is only one sector, where the road bike is faster. But the overall time difference is approximately 2.5% only. In the simulation, we had to use a constant power in our application “Course to Speed”. In addition, we had to assume, that the aerodynamic position on the time trial bike can be taken in all sectors. In the race, Sebastian Kienle was probably able to produce more power with the road bike in the uphill sections than with a time trial bike due to the less perfect positioning in these sections. Here, data from a power device would give some useful data. By using our application “Power to Speed” an exact answer would then be possible.