

SEEKING

safe e-biking

E-Bicycles – Bicycles or Mopeds?

Overview about the Project „SEEKING – SAFE E-BIKING“

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Funding, Partners



Karl Katoch (www.strombike.at)

Pedelec - E-Bike - Moped

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Aims & Methodology

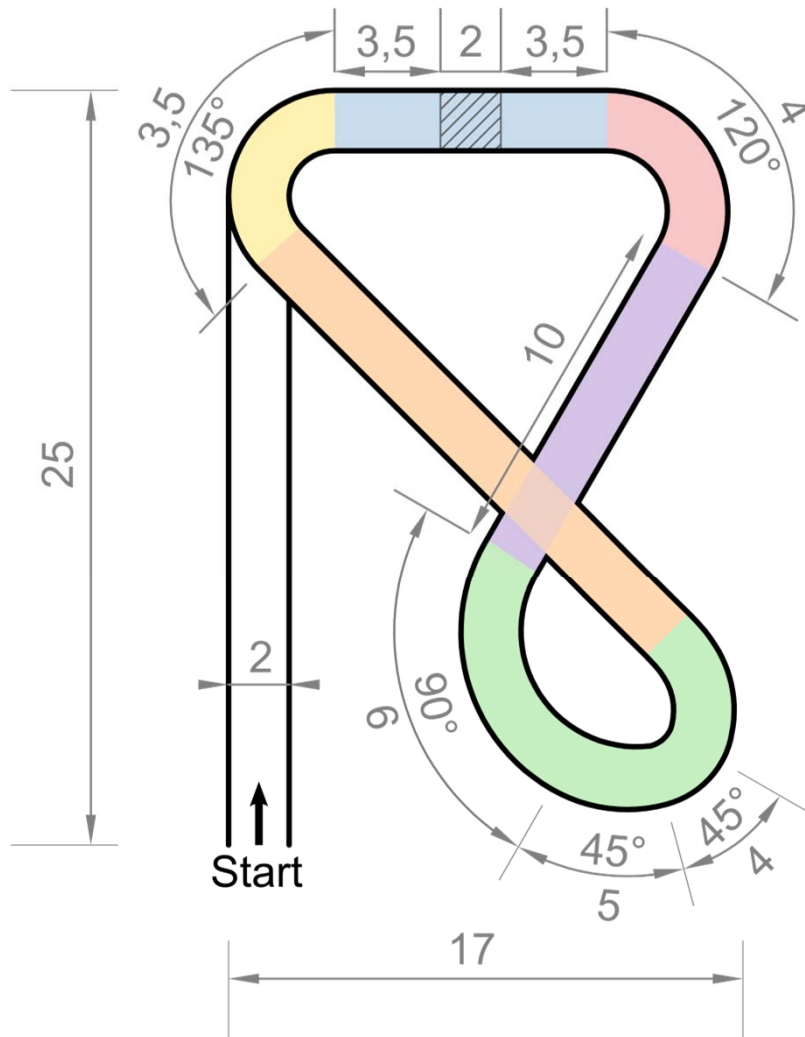


- Riding behaviour & Riding dynamics
 - Tracktests – Measurements (objective)
 - Interviews (subjective)

- Risk potential, conflicts

- Preventative measures

Testcourse



 Klosterneuburg,
Vienna, Pachfurth

 Course with 6
Sections

 Start-Stop Field

 Straights

 Curves

Technology / Tests

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Tracktests (1/3)



- G E-Bicycle: 39 Problems (18 Riders);
- G Bicycle: 18 Problems (12 Riders);
- G Women were riding more carefully, took their time for explanations;
- G Men interested in technology, were more often surprised about the acceleration.

Tracktests (2/3)



- Vehicle specific differences measured;
- Different sensor technology and Engine control show effects in the vehicle dynamic data;
- Echo-Sensor (ON/OFF; 100% Power);
- Torque-Sensor; lag of the engine.

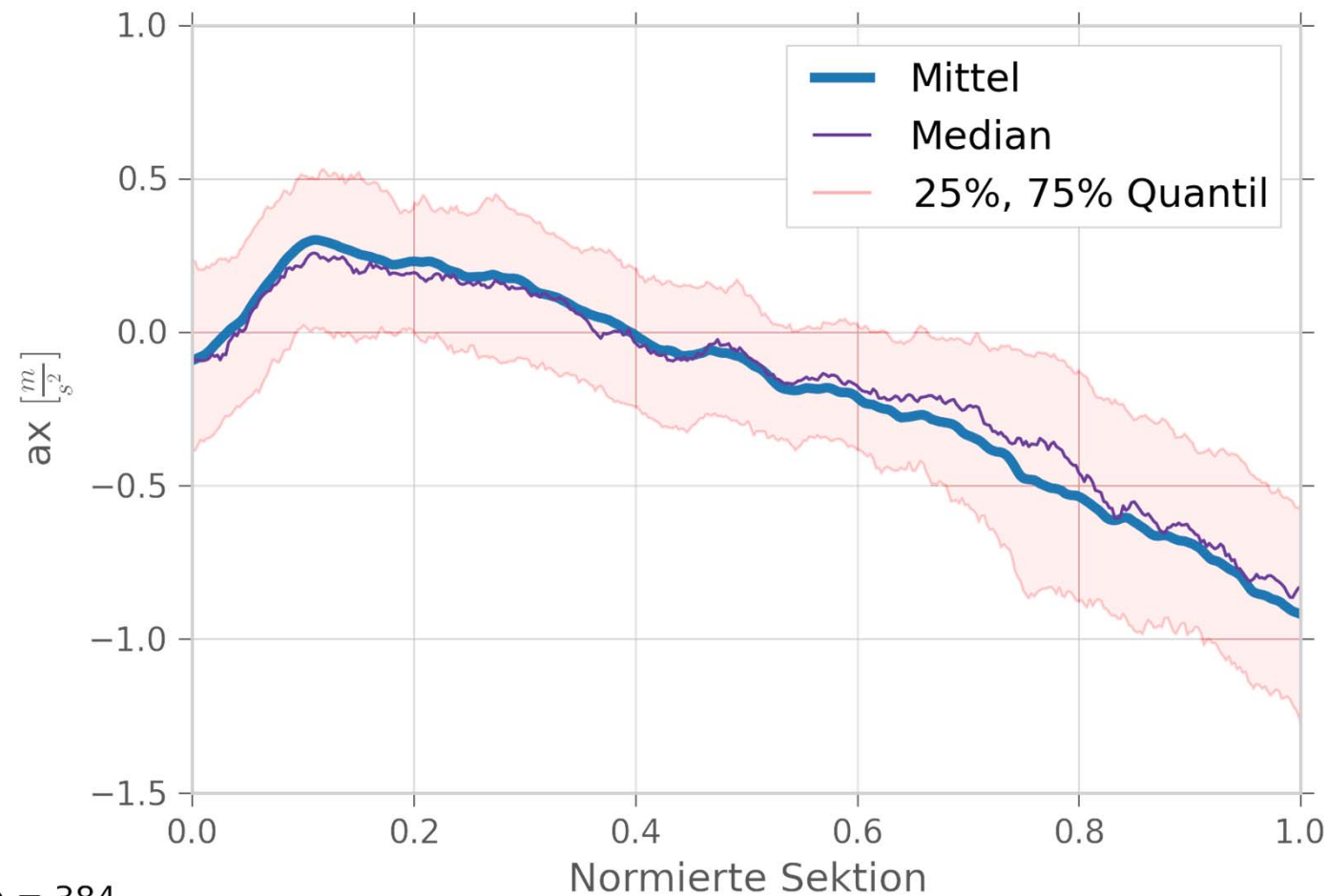
Tracktests (3/3)



- Riding in bends + Braking = similar to Moped riding;
- Body-/Muscle tension missing on E-Bicycles;
- Position of centre of gravity changed.

x-Acceleration Engine OFF

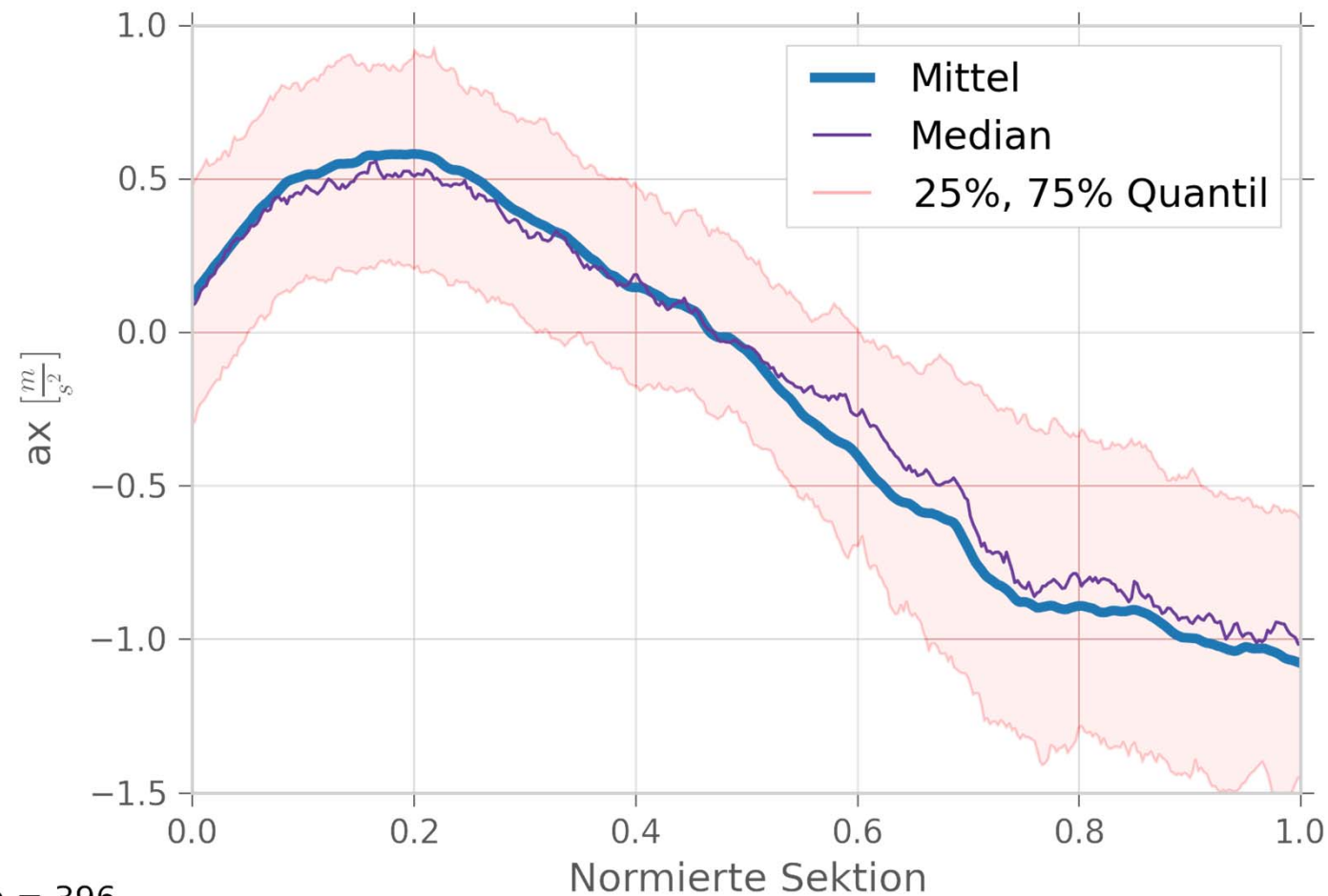
Charakteristische Sektion 5 (lange Gerade), Motor Aus



n = 384

x-Acceleration Engine ON

Charakteristische Sektion 5 (lange Gerade), Motor An



n = 396

Take home messages (1/2)



- Parameter „Engine ON“ measurable in vehicle dynamics;
- Influence of riding style/rider type
- Self-estimation riding skills reflecting on conflicts
- Riding in bends problematic
- Pre-test phase relevant

Take home messages (2/2) **SEEKING** safe e-biking

- ZERO conflicts → experienced riders
- Experience = Skills = Safety
- Rain was not a problem → new experience
- Vehicle technology at wet condition!!!
- good, safe bicyclists = good, safe E-bicyclists
- Experience from tracktests approved
- Quality of vehicle + Human factor relevant

Measures



- G** *Legislative Measures* (Power, Age,...)
- G** *Infrastructure Measures* (Directives, road planning, widths, radii,...)
- G** *Vehicle Technology* (Norms, Standards, CE, types,...)
- G** *Awareness raising* (Training, PR, leaflets,...)
- G** *Further research, statistics*

Thanks for your attention!

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