



greenTEG

# Core body temperature monitoring during daily life

greenTEG AG

2020



## Study

# Core body temperature monitoring during daily life

**Goal:** Detection daily temperature cycles using greenTEG's smartwatch integrated sensor

**Activity:** Free-living

**Requirements:** 2x 1h of high-intensity sports

**Position:** Wrist

**Reference:** Ingestible radio pill

**Data collected:** > 2.5 million data points

**Calibration:** No calibration required

**First reading:** After 4 minutes



Working



Eating



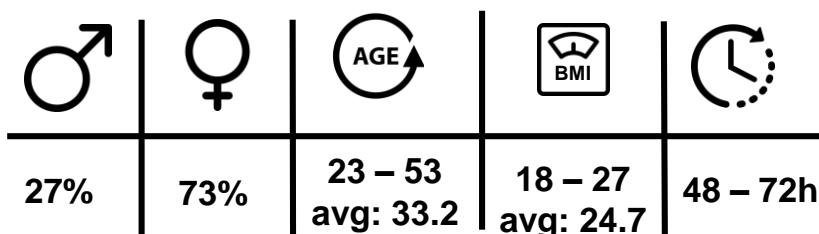
Commuting



Sleeping



Sports



## Results:

# Algorithm 1: 1 XU integrated into Health Watch

### Sensors used:

- 1 XU - greenTEG's Thermal Energy Transfer Sensor
- 3<sup>rd</sup> Party PPG sensor

### Results:

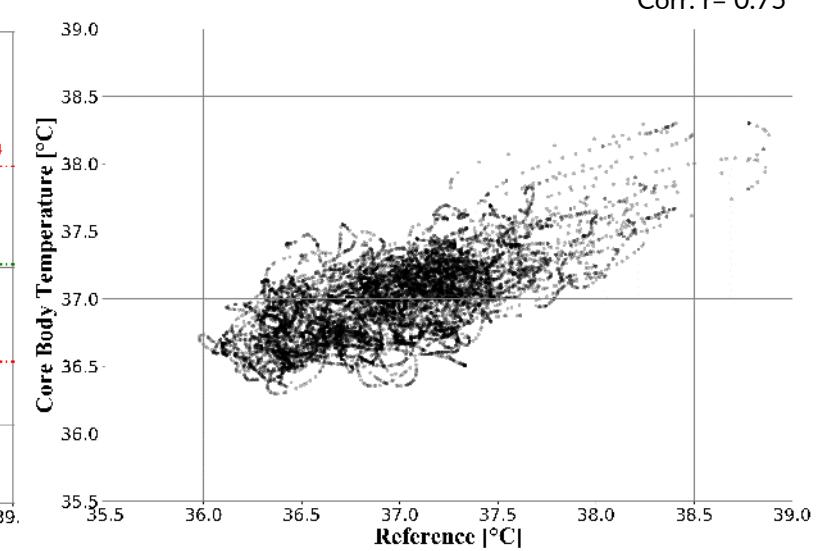
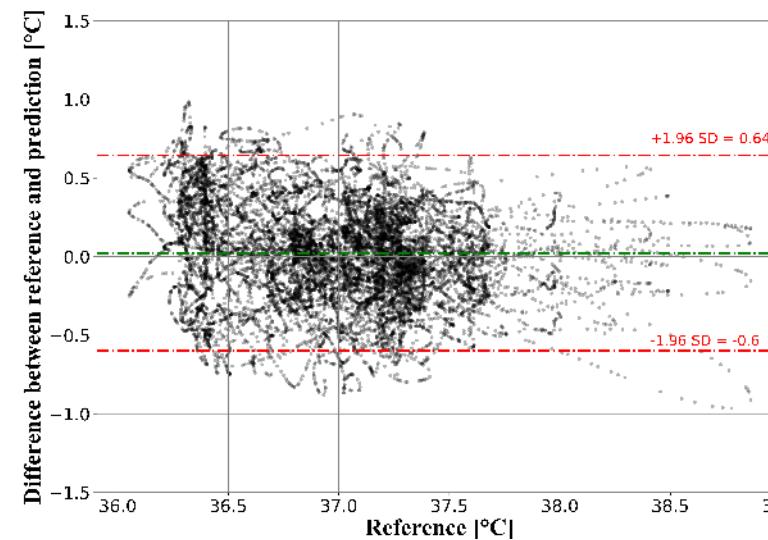
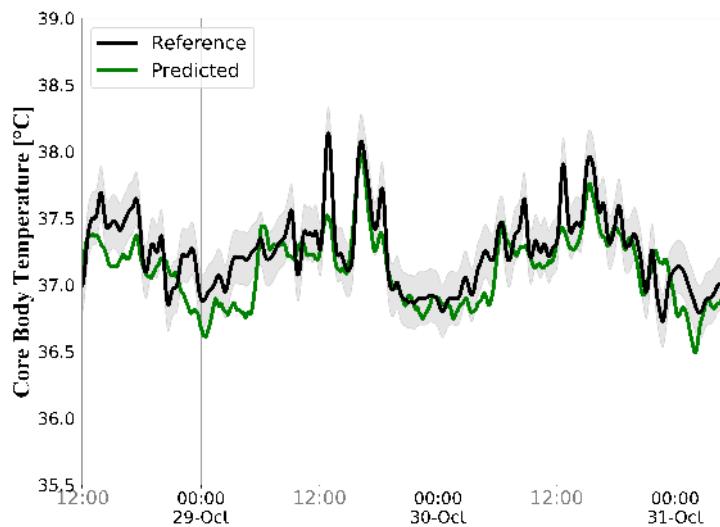
- High accuracy of core body temperature monitoring on the wrist
- Capable of tracking the circadian cycle
- Good compensation of any thermal influences in the environment

### Statistics (over all measurements):

- Mean absolute deviation: 0.30 °C
- Standard deviation: 0.26 °C
- Correlation Coefficient: 0.75

**Calibration:** No calibration required

**First reading:** After 4 minutes



## Results:

# Algorithm 2: greenTEG's Demonstration Watch



### Sensors used:

- 2 XU - greenTEG's Thermal Energy Transfer Sensors

### Results:

- High accuracy of core body temperature monitoring on the wrist
- Capable of tracking the circadian cycle
- Good compensation of any thermal influences in the environment

### Statistics (over all measurements):

- Mean absolute deviation:  $0.22^{\circ}\text{C}$
- Standard deviation:  $0.29^{\circ}\text{C}$
- Correlation Coefficient: 0.76

**Calibration:** No calibration required

**First reading:** After 4 minutes

