

Elevated platforms for broiler chickens – automatic early detection of animal welfare problems

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Background

Elevated platforms to

- enrich broiler chicken housings
- to improve broiler animal welfare

Early detection to

- quickly allow measures against welfare problems

Question

Is it possible to use elevated platforms combined with weighing beams to automatically record changes in birds' activity as an indicator for welfare problems?

Methods

Animals

- 2 batches
- 200 animals in 6 pens each
- Fast-growing mixed-sex broiler chickens (Ross 308)
- Fattening period: 35d

Elevated platform:

- Surface: plastic grid; area: 2.4m² → 30% of the animals

Weighing system

- 8 load cells in between 2 steel frames connected with a transmitter

Measurements

- Continuous recording of the total weight via weighing system
- Usage of elevated platform via video recording

Algorithms for

- Average daily weight
- Usage of elevated platform
- Activity on and from the elevated platform

Conclusion

Elevated platforms with integrated weighing system...

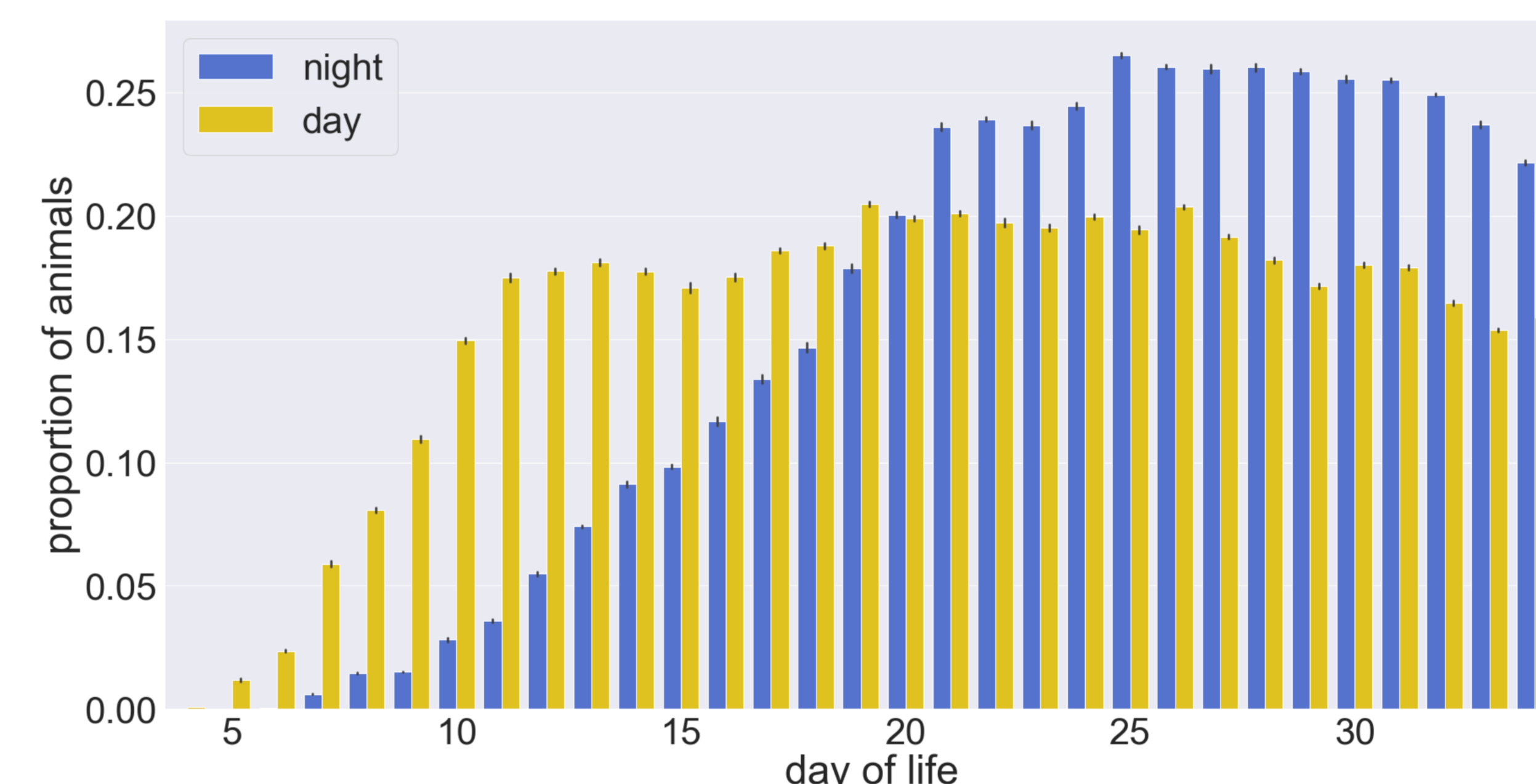
... are suitable for continuous recording of average daily weight and activity

... can potentially be used for observations of climate- and health-related behavioural changes

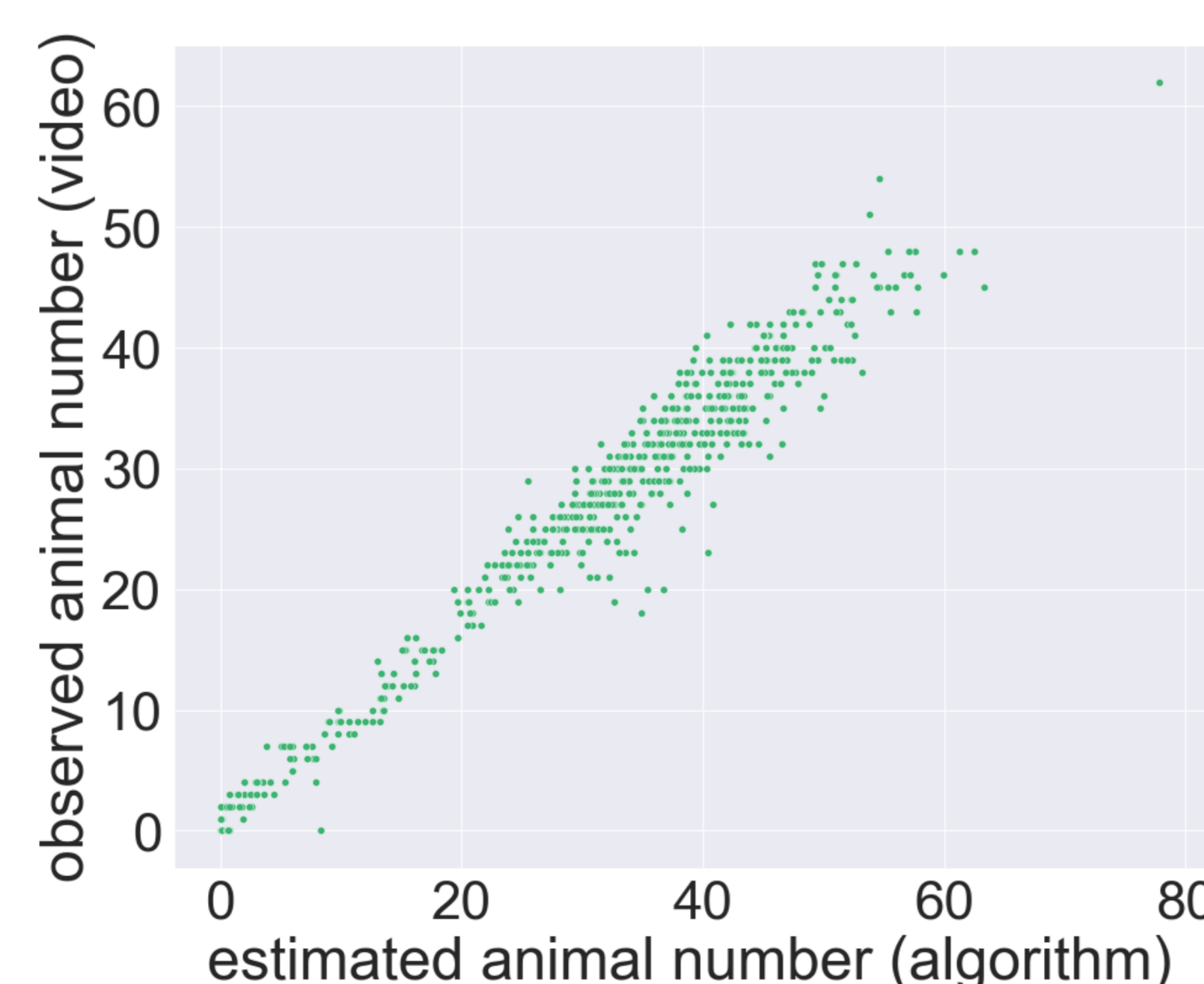
Results



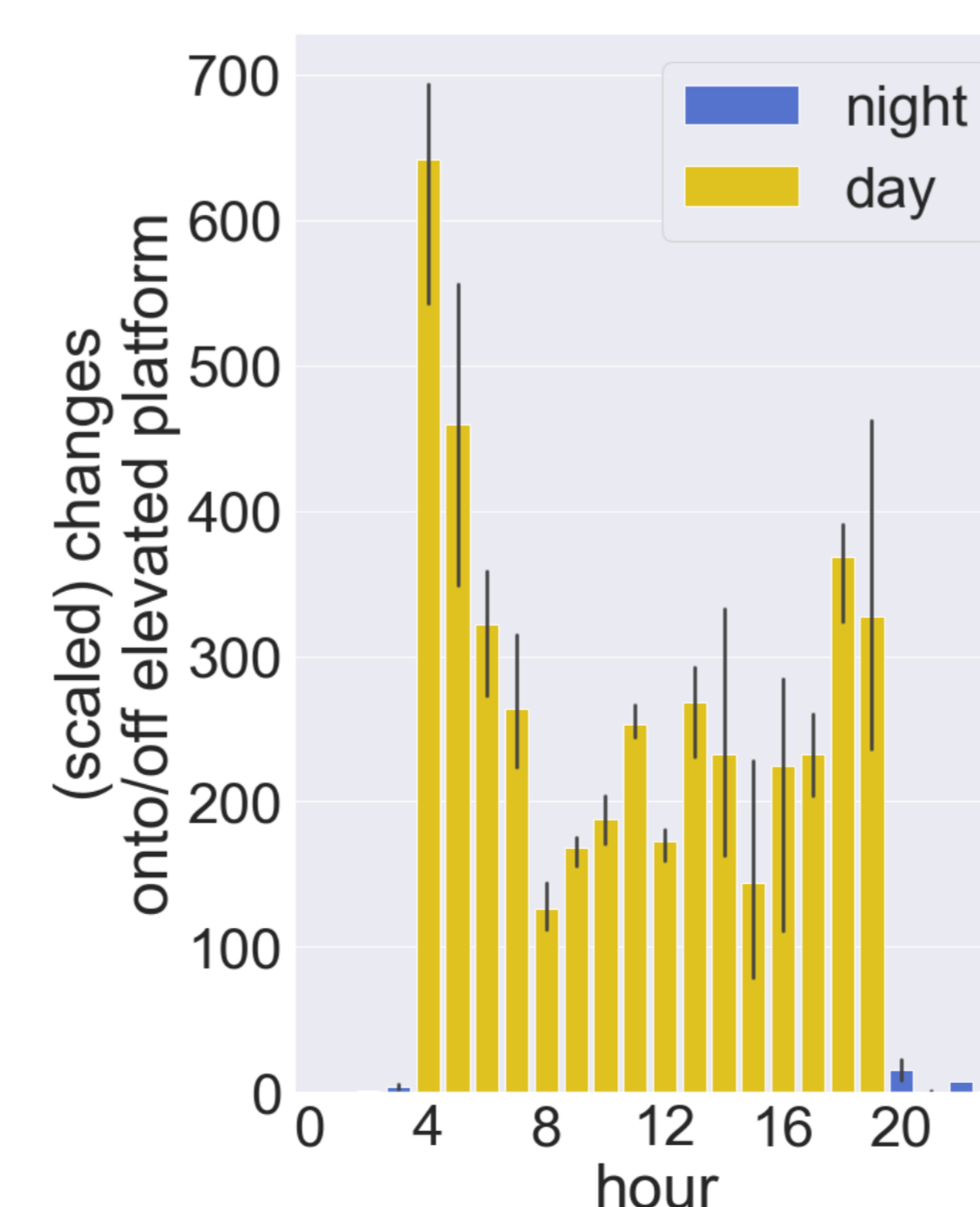
Experimental pen with elevated platforms



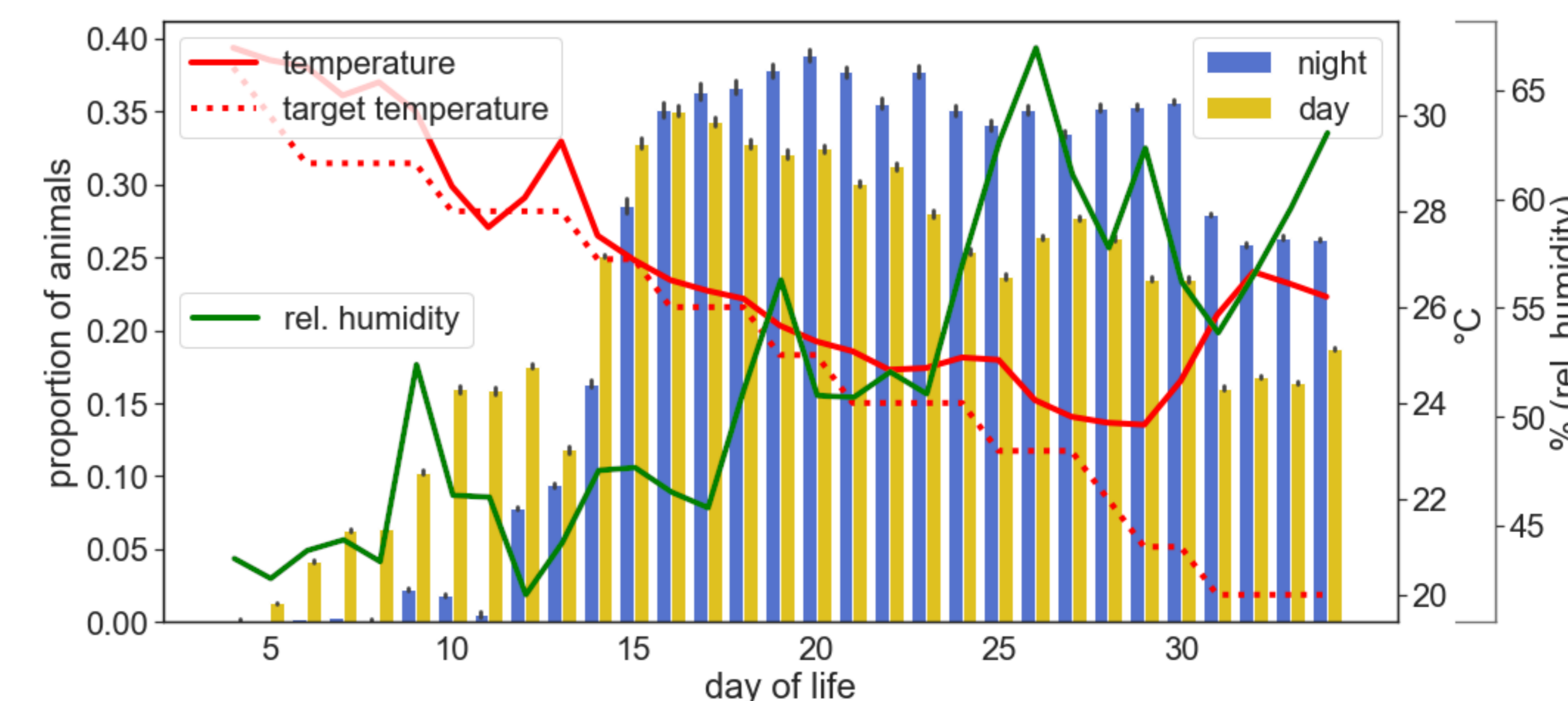
Use of elevated platform [%] at day and night



Comparison of the observed and estimated number of animals on the elevated platform



Circadian rhythm platform changes at d17



Use of elevated platform depending on humidity and temperature