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Measuring thermal comfort of courtyards by mobile measurements - a case study

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Motivation

Courtyards are frequent recreation rooms for city dwellers and are also frequently visited during periods of heat.

How to measure the heat load of courtyards in an optimal way?

→ Are mobile measurements generally suited to assess thermal loads of courtyards?

Measurement equipment

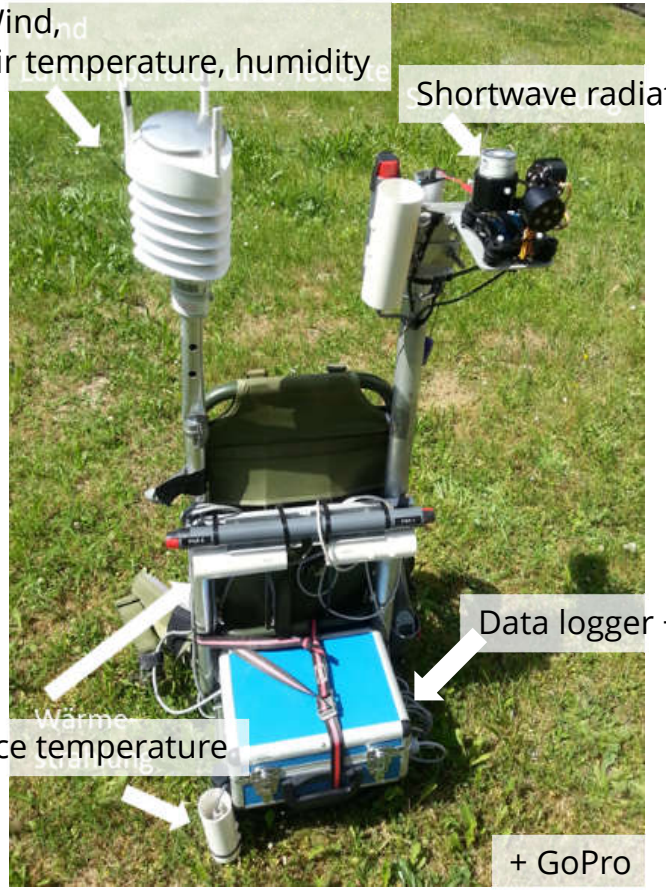
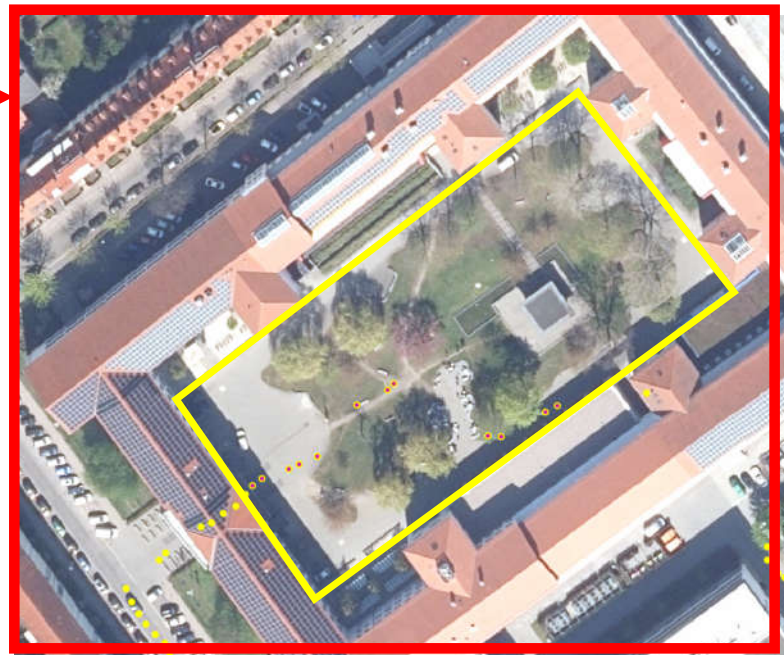


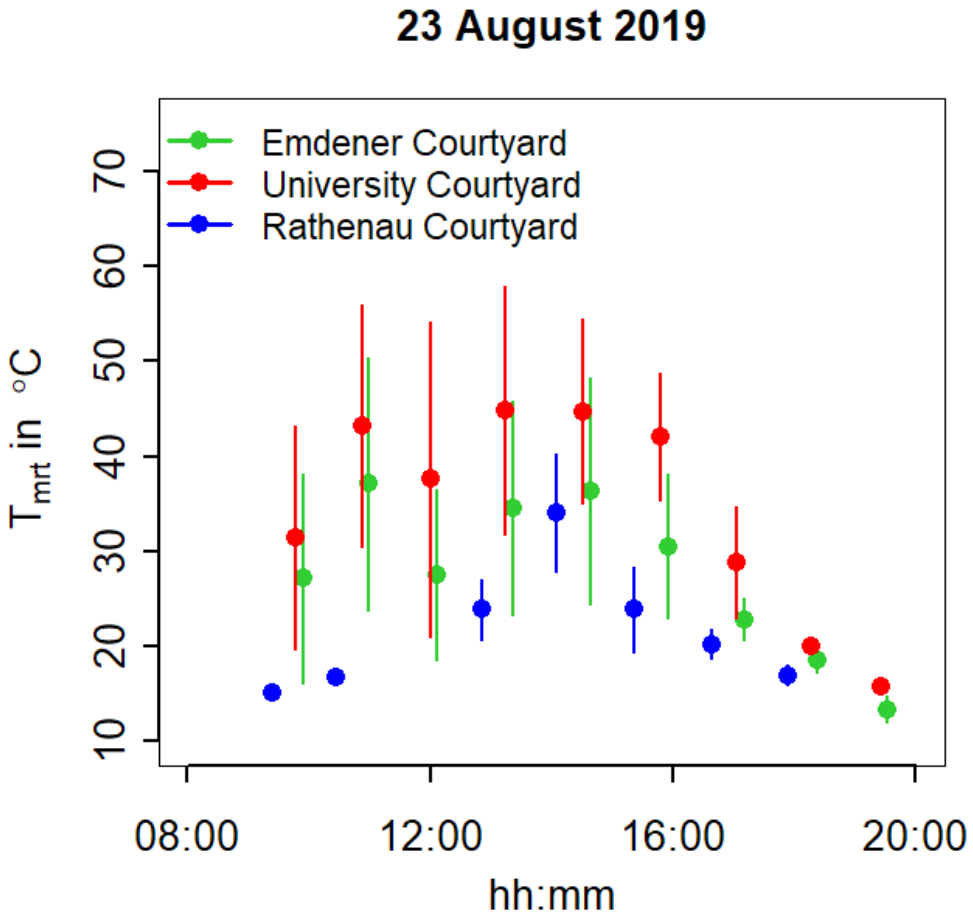
Foto backpack: A. Ziemann, TU Dresden
Foto measurement walk: V. Goldberg, TU Dresden

Investigated Courtyards

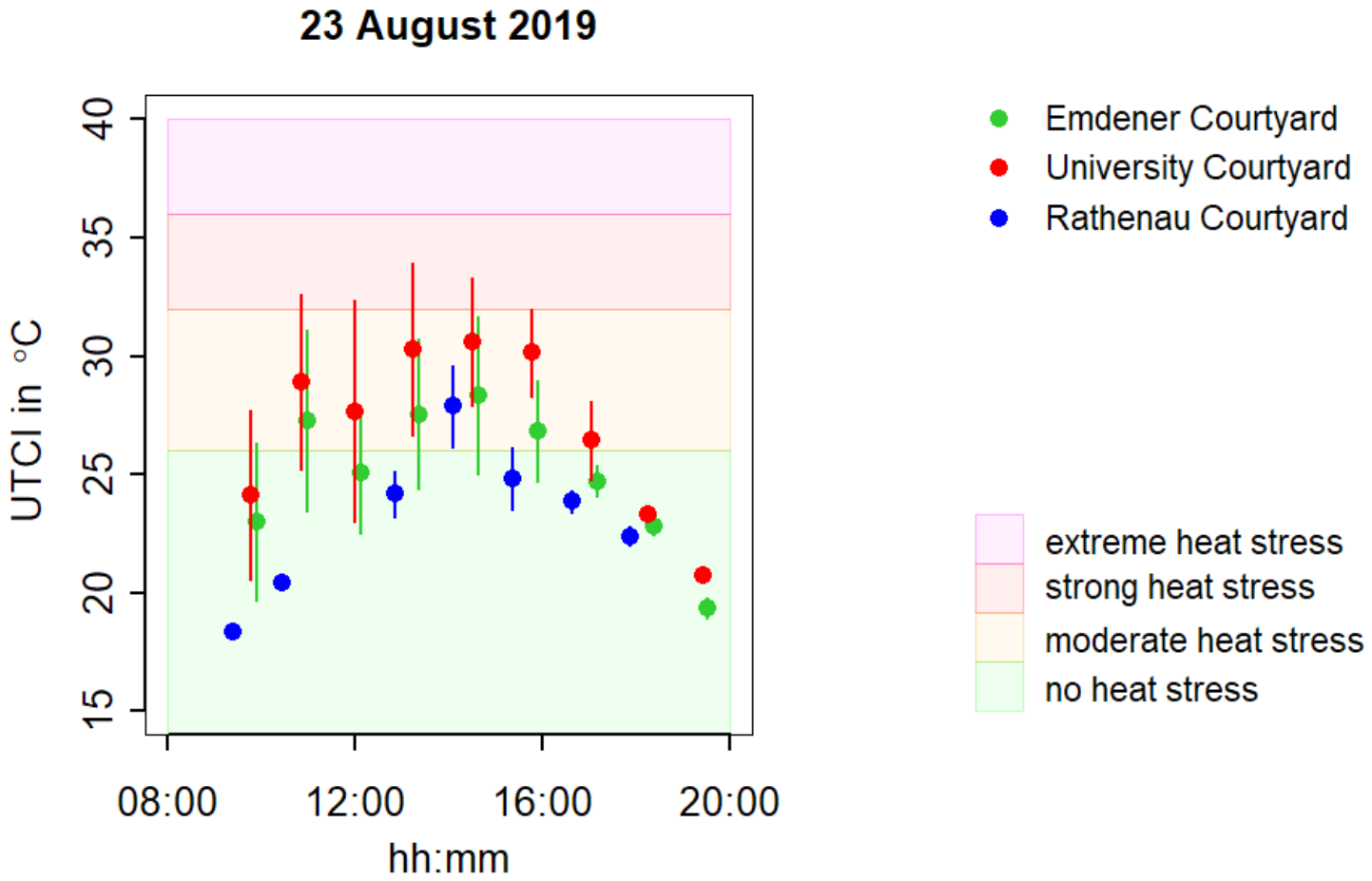
	Rathenau Street	Emdener Street	University of Applied Science
Area in m²	250	4400	7100
Shape	Quadrangle	Quadrangle	Quadrangle
Sealed area in %	20	19	49



Results – daily cycle of radiation related variables



Results – daily cycle thermal comfort



Answers and Outlook

Are mobile measurements generally suited to assess thermal loads of courtyards?

- generally, yes
- consistent results for thermal loads in relation to courtyard size and surface characteristics

Points for future work

- adapt measurement route to increase spatial representativity
- adapt measurement route so that user behaviour is also recorded, which goes beyond simply crossing the inner courtyard.

Your are invited to **check our abstract.**

Visit the website of **our project** „HeatResilienCity“

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