Lehrstuhl für Bauphysik
School of Engineering und Design
Technische Universität München

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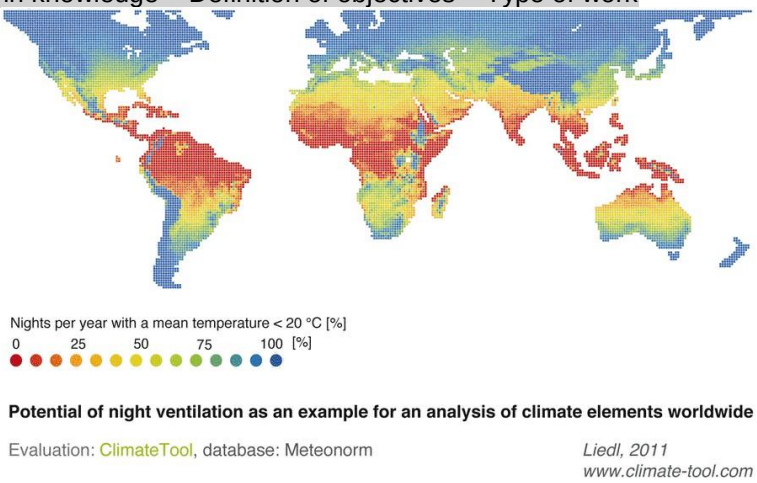
IDP: Software development for the identification of climate adaptation of buildings in dependence of different comfort models *

* Scope and tasks can be adjusted accordingly

Context – Relevance

Climate-friendly construction and digitalisation are becoming increasingly important due to the advancing climate change and the associated public discussions. A dissertation on this topic has already resulted in a MatLab-based tool for architects and planners (Dr.-Ing. Anica Mayer, Entwicklung einer Methode zur Bestimmung der Klima- und Kulturperformanz von Gebäuden unter Berücksichtigung der Nachhaltigkeit; https://nbn-resolving.de/urn/resolver.pl?urn:nbn:de:bvb:91-diss-20221130-1687719-1-8). This tool provides a basis, but needs revision in terms of user-friendliness and usability. In addition, the tool should perform other functions: determining adaptation to the expected climate.

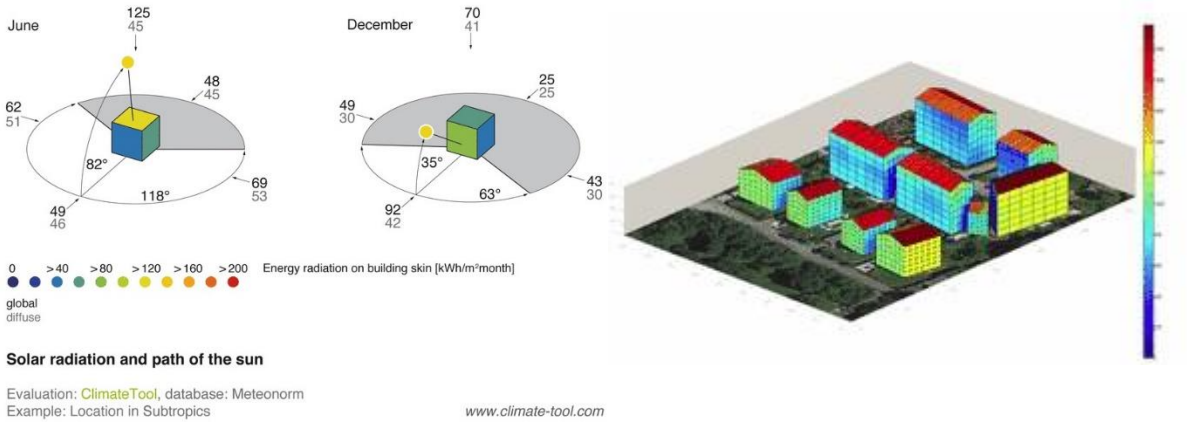
Interest in knowledge – Definition of objectives – Type of work



The aim of this IDP is to revise and extend the existing basic tool. The user interface is to be improved in terms of usability in order to use the tool in various courses and to develop it further if necessary.

For this purpose, the following are to be implemented:

- Processing weather and climate data from different sources.
- Consideration of different comfort models and times of use
- Import of climate data of future scenarios
- Output of characteristic values of climate adaptation



Methodology – Work packages

The task of this project is to revise an existing program in MatLab so that the user-friendliness is increased and further functions are possible. By reading climate and weather data, the adaptation of the building to the climate is to be determined, taking into account various comfort models. The IDP will take place at the Chair of Building Physics with one workstation and regular supervision.

The work packages include:

- Improvement of the user friendliness
- Optimization of the user interface
- Input of climate, weather data and comfort models
- Definition of the data input format → climate data interface
- User interface with data output option in different formats
- Data visualization

Prerequisites – Requirements

- MatLab
- Excel
- SQL

are desirable, but not absolutely necessary.

Supervision – Contact

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