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Talk title and synopsis

Development of Indoor Climate Monitoring and Prediction Tools

The lecture will initially address the development of technical solutions for the monitoring of thermal comfort and indoor air quality in buildings. The development of an Indoor Environmental Quality multiprobe measuring system and the respective data-acquisition and processing software will be addressed. Apart from the presentation of the measured values, the main novelty of the system is the classification of the indoor environmental conditions according to the categories defined for thermal comfort, relative humidity and indoor air quality in EN-16798-1 standard. The system also introduces innovative graphical representations for reporting different phases of audits.

A software tool developed with the objective of calculating the time evolution of the concentrations of a bio pollutant and of CO2, as well as the exposure dose to the bio pollutant is also introduced and the results obtained with it for some case studies are presented. Finally, the common use of the simulation software together with the results of data monitoring systems is addressed as an approach for the management of buildings and HVAC systems.