A Heat Dynamic Model for Intelligent Heating of Buildings - DTU Orbit (09/03/2019)

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This article presents a heat dynamic model for prediction of the indoor temperature in an office building. The model has been used in several flexible load applications, where the indoor temperature is allowed to vary around a given reference to provide power system services by shifting the heating of the building in time. This way the thermal mass of the building can be used to absorb energy from renewable energy source when available and postpone heating in periods with lack of renewable energy generation. The model is used in a model predictive controller to ensure the residential comfort over a given prediction horizon.

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