Short-/Long-Term Hybrid Deep-Learning-Based Weather Forecasts for Energy Systems Control

Weather forecasts are essential for optimal predictive control of energy systems. However, conventional machine/deep-learning-based weather forecasts are either short-term or long-term so that it cannot be directly used for coordinated control of multiple systems with different response times. The project will develop a novel scheme for short-/long-term stochastic weather forecasts using deep learning techniques for temporal coordinated control of multiple energy systems.

The project aims to develop a novel scheme for short-/Long-term stochastic weather forecasts using deep learning techniques for temporal-coordinated energy systems (e.g., buildings, distributed energy systems) control.

The project tasks include: (1) Develop a scheme for both short-term and long-term weather forecasts using deep learning, (2) Apply the scheme to building control through simulations .

Maximum students: 5