DAnish WINd-farm Control Initiative (DAWINCI)

- **Control-centric short term forecasting.** The distributed nature of wind farms will be exploited to develop numerical efficient and reliable algorithms to estimate control relevant forecasting models.
- **Integrated topology and wind farm control optimization.** Optimization of the wind farm topology and control with the aim of identifying the optimal balance between power production, degradation, financial costs and O&M costs.
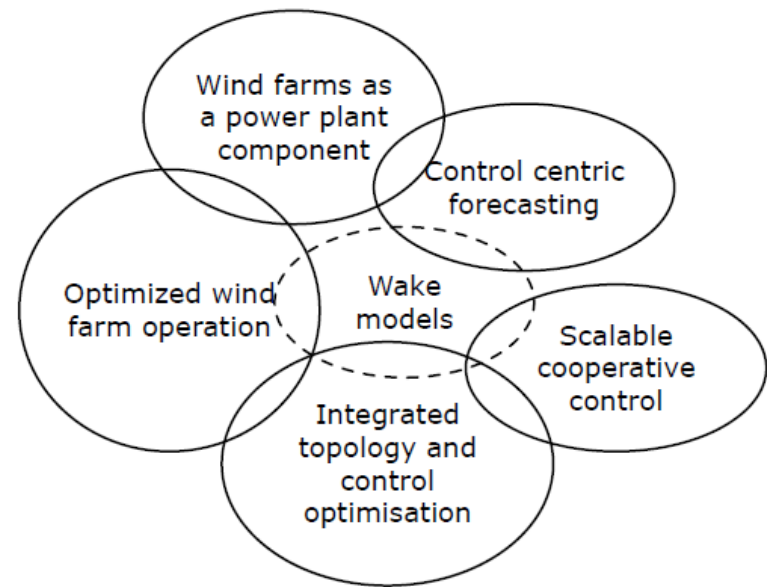

Figure 1 Problem areas covered by objectives.

- **Scalable cooperative control of wind farms.** Robust and scalable methods for control of wind farm dynamics with a focus on decentralized cooperation for improved scalability.
- **Optimised dynamic wind farm operation.** Non-convex and non-linear dynamic optimization methods in conjunction with qualified heuristics for improved farm operation in terms of reference tracking and fatigue load.
- **Wind farms as power plant components.** Closer integration of wind farms in power production portfolio management including considerations on technological and architectural requirements.

These objectives will be achieved primarily through four PhD and three postdoc projects supported by industry specialists and senior research staff.