Schedule for workshop on Mathematical Sciences Collaboration in Energy Systems Integration
Danish Technical University, 24-25 September

Thursday (0930-1730):

- ***Welcome (0930-1020)***
  - Introduction to workshop (Chris Dent, Durham)
  - Energy systems integration (Henrik Madsen, DTU Compute)
- ***Markets and optimisation (1020-1200 inc coffee break)***
  - 1020-1040 Manolis Loukarakis (Durham), *Decentralized optimisation and control in electric power systems*
  - 1040-1100 Jalal Kazempour (DTU Elektro), *Electricity markets under renewable uncertainty: Applications of stochastic programming*
  - ***1100-1105 Break***
  - 1105-1125 Juan Miguel Morales González (DTU Compute), *A data-driven bidding model for a cluster of price-responsive consumers of electricity*
  - 1125-1155 Discussion
- ***Storage and demand side (1155-1515)***
  - 1155-1215 Pierre Pinson (DTU Elektro), *From recent results with demand response to markets for integrated energy systems*
  - ***1215-1315 Lunch***
  - 1315-1335 Stan Zachary, James Cruise and Richard Gibbens (HW/Cambridge), *Economics of storage and demand management*
  - 1335-1355 Gruff Edwards (Durham), *Assessing the contribution of storage to generation adequacy*
  - 1355-1415 Daniel Burke (UCD), *Integrating electricity and local storage of heat in the domestic sector*
  - 1415-1435 Ioannis Dasios (Limerick), *Singular systems of fractional nabla difference equations: a tool for time scales analysis and storage*
  - 1435-1515 Discussion
- ***Coffee (1515-1535)***
- ***Short term forecasting (1535-1730)***
  - 1535-1555 Gruff Edwards and Stan Zachary (Durham/HW), *Use of wind speed ensemble forecasts for prediction and control in electricity systems*
  - 1555-1615 Conor Sweeney (UCD), *Errors and probabilities in Numerical Weather Prediction*
  - 1615-1635 Emil B. Iversen (DTU Elektro), *Do it yourself(!): an open-source package for probabilistic spatio-temporal renewable energy forecasting*
  - 1635-1655 Jan Kloppenborg Møller (DTU Compute), *Wind power forecasting using stochastic differential equations*
  - 1655-1730 Discussion
- ***1800 Dinner (venue tbc)***

Friday (0930-1400):

- *Modelling and Control (0930-1200)*
  - 0930-0950 Niels Kjølstad Poulsen (DTU Compute), *Stochastic control theory with applications related to energy systems*
  - 0950-1010 Federico Milano (UCD), *Impact of volatility, uncertainty and frequency regulation on power system frequency distribution*
  - 1010-1030 Henrik Madsen (DTU Compute), *Grey box modelling*
  - 1030-1050 Michael Goldstein (Durham), *Uncertainty in complex computer models: models versus real energy systems*
  - *1050-1055 Break*
  - 1055-1115 Amy Wilson (Durham), *Statistical modelling for the inclusion of wind generation in adequacy studies*
  - 1115-1200 Discussion
- *Next steps (1200-1400)*
  - *Including lunch (1215-1315)*
  - Collaborations though existing projects
  - Funding opportunities
- *Informal discussion (1400-)*