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## **Messy Energy Data: Sense-making via changepoint and anomaly detection**

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With the routine collection of energy management data at the organisational level comes a growing interest in using data to identify opportunities to improve energy use. However, changing organisational priorities can result in data streams which are typically very messy; with missing periods, poor resolution and containing structures that are challenging to contextualise. Using operational data collected over three years on a university campus this presentation shows the influential role changepoint analysis and statistical anomaly detection can play in making sense of such data. Combining building level data for multiple utilities we demonstrate the ability of the methods to detect:

1. Systematic changes in the quality of monitoring and energy use across the organisation.
2. Anomalous usage at the building level.

We illustrate how these could be placed in an organisational context to guide energy management decisions.

### **Type of presentation**

Talk

### **Classification**

Mainly application

### **Keywords**

Energy, anomaly, time series

**Primary author:** Dr SMITH, Paul (Lancaster University)

**Co-author:** Prof. ECKLEY, Idris (Lancaster University)

**Presenter:** Dr SMITH, Paul (Lancaster University)

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