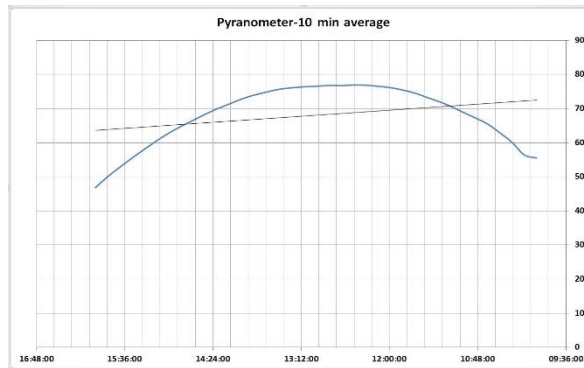
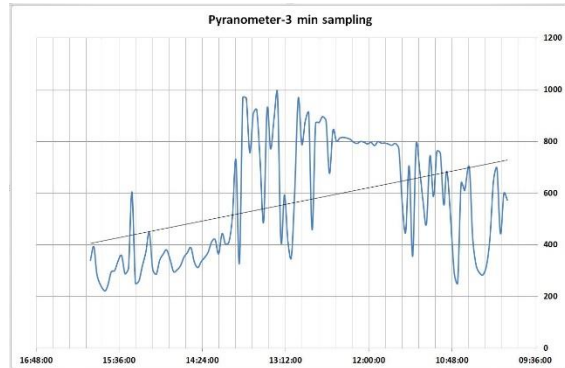


# PV Monitoring Methods



- Understanding types of PV faults
- Methods for identifying faults
- Survey of data and devices used for PV monitoring
- Understanding PV data collection methods
- Methods used for monitoring PV systems



The resolution of data sampling may affect data conclusions. Understanding how data collection affects statistical analysis is critical for accurate monitoring.



## Introduction to statistical tests and machine learning

- Hypothesis testing and bootstrapping
- Machine learning algorithms
  - Regression
  - Classification
  - Clustering
  - Other algorithms

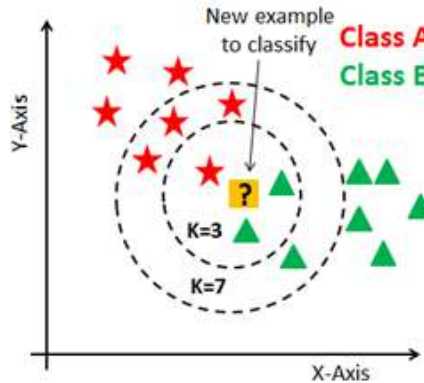
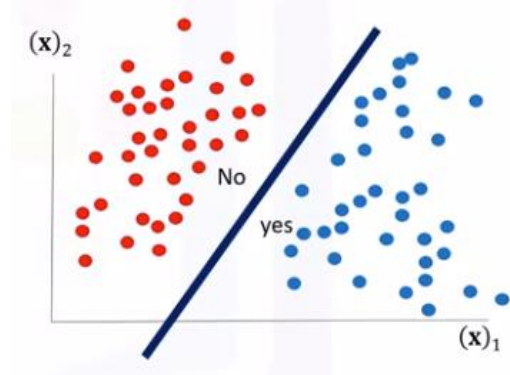


Illustration of classification – a popular algorithm used in PV monitoring.



A logistic regression model used for predicting the category of input data.

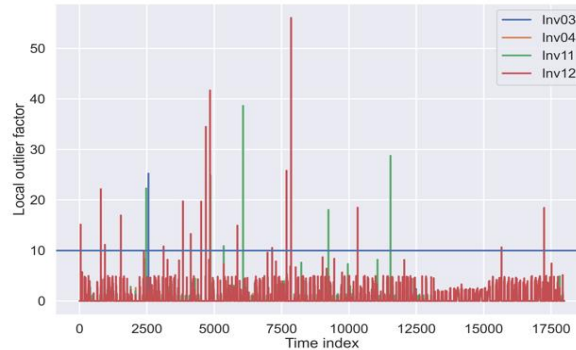
# Research and Analysis of Different Methods



Comparison of eight fault detection system effectiveness

Presentation of 22 different methods used for monitoring PV systems

- Country
- Year of publication
- Data details and resolution
- Data filters
- Algorithms used
- Types of faults identified
- Simulation method
- Stage of development
- Summary



Results obtained applying an algorithm studied to a dataset containing diverse solar data.