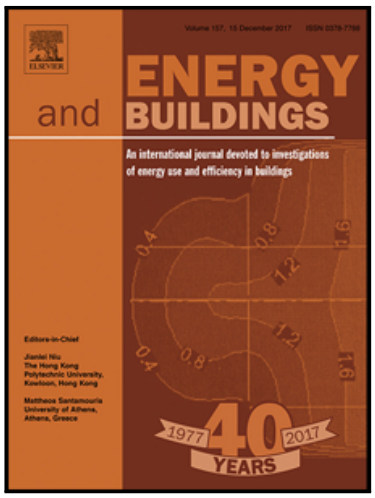


# Improved sensor fault detection, diagnosis and estimation for screw chillers using density-based clustering and principal component analysis

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## Highlights

- Proposed an improved sensor FDD&E method for screw chillers using DBSCAN and PCA.
- DBSCAN recognized 2 chiller operation conditions and trained sub-PCA models.
- A year of field operating data from a real chiller system were applied for model validation.
- Proposed method showed more sensitive FDD results than the conventional PCA method.
- An energy balance index was presented to distinguish serious faults from other normal operations.