

## **The Research of Smart electricity meters Regional Environment Adaptability Based on Fuzzy Clustering**

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### **Abstract**

China has a vast territory, which cause the regional environmental characteristics are quite different. The different climatic conditions make great influence on the accuracy and reliability operation of the smart electricity meters. This paper analyzes the typical failures of smart electricity meters in different regional environment, makes the relationship between smart electricity meters failure and environmental factors. A fuzzy clustering method for dividing environment regional of smart electricity meters which considering temperature, humidity, salt-fog and solar radiation was proposed. Through the analysis of the climate data in China State Grid Corp operating region, considering the close relationship between multiple factors, using the selection principle to establish a fuzzy similarity matrix. And then make the regional division by  $\lambda$ -cut matrix. The results show that the regional division conform to the smart electricity meters operating environment adaptability which verify the rationality and applicability of the method.