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## Abstract Format

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# Development of Metrology for Digital Measurement Technology in SGCC

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### Abstract

This presentation mainly introduces the development of metrology technology for digital energy system (DES) in China. The used and tested condition of digital energy equipment including electronic instrument transformer (EIT), merging unit (MU) and digital energy meter (DEM) are described and the results of the survey show it already widely used in China. The working group which is for the research and develop of the traceability and calibration technology for digital energy equipment in SGCC and working schedule are introduced.

It focuses on the online calibration technology and characteristics analyzed of electronic instrument transformer. A test system is setup in 110kV Dong Shan substation in 2014. 18 EITs made by 3 manufacturers are selected as research samples for characteristics analyzed. 6 Instrument transformers are used as reference for online calibration. An online monitor system which includes climate sensor is used for data acquisition and big database established. A data process method is introduced for delete and eliminates outliers from original database. The analyzed results show the error characteristics of different EITs.

Some ongoing projects will be also introduced at the last of this presentation. Further research will focuses on evaluate the reliability of digital energy system in real working condition. Digital energy meters are already add to the test system in 110kV Dong Shan substation and another 10kV test system also built in 2016. More climate sensors will setup inside the test system and a environments database will establish late. Better data mining algorithms will be researched and use for big data analyzed and optimal design of digital energy system.