

Abstract Submission Form

Title: Modeling of an Islanded Operation Controller for Power Systems Study

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Open-source simulation software information:

**OpenIPSL** version: v1.0.0

**OpenModelica** version: v1.13.2

Abstract:

The islanded operation controller is used in a power distribution network to correct the frequency deviation when it is islanded from the main transmission network. The controller is modelled using the Modelica language and tested in a power network built using the OpenIPSL. The controller uses a PI function and modeled using a centralized control architecture that receives data from phasor measurement units (PMUs), thereby complementing existing generator control systems instead of replacing the existing ones. The controller is activated when the distribution side is islanded from the main transmission grid and it retains a zero frequency deviation of the distribution network.

References:

1. **B. Mukherjee**, L. Vanfretti, "Modeling of PMU-Based Islanded Operation Controls for Power Distribution Network using Modelica", American Modelica Conference 2018, Cambridge, MA, USA. DOI: [10.3384/ecp18154112](https://doi.org/10.3384/ecp18154112)