

## Control of Photovoltaic Inverters for Transient and Voltage Stability Enhancement

The increasing number of megawatt-scale Photovoltaic (PV) power plants and other large inverter-based power stations that are being added to the power system are leading to changes in the way the power grid is operated. In response to these changes, new grid code requirements establish that inverter based power stations should not only remain connected to the grid during faulty conditions but, also provide dynamic support. This feature is referred in the literature to as momentary cessation operation. The few published studies about momentary cessation operation for PV power plants have not shed much light on the impact of these systems on the overall power system stability problem. As an attempt to address this issue, this project proposes a control scheme for PV inverters that improves the transient stability of a synchronous generator connected to the grid. It is shown through the paper that the proposed control scheme makes the PV inverter's dc link capacitors absorb some of the kinetic energy stored in the synchronous machine during momentary cessation. Besides that, the proposed solution is also able to improve voltage stability through the injection of reactive power. simulation results are presented in order to demonstrate the effectiveness of the proposed control scheme

**Domain:** Power Systems \_ Hybrid Systems

**Technology:** Electrical