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(54) **LINEARIZED-TRAJECTORY PREDICTIVE CONTROL FOR MICROGRID STABILITY**

(71) Applicant: **Schweitzer Engineering Laboratories, Inc.**, Pullman, WA (US)

(72) Inventors: **Dakota Hamilton**, West Lafayette, IN (US); **Dionysios Aliprantis**, West Lafayette, IN (US)

(73) Assignee: **Schweitzer Engineering Laboratories, Inc.**, Pullman, WA (US)

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(57) **ABSTRACT**

Techniques and apparatus presented herein are directed to improvements in maintaining voltage and frequency stability of an electric power delivery system. To do so, model predictive control (MPC) may be used. Input data may be obtained for a sampling period and may include a current system state. The MPC may predict an initial trajectory of the input data, output data, and a state of the system for a prediction period. The MPC may linearize the output and state trajectories and determine an updated input trajectory based at least in part on the linearized output trajectory. The MPC may determine control inputs to the system which achieve the updated input trajectory for a control period. The MPC may transmit control signals based at least in part on the control inputs to equipment associated with the input data.