ICRERA 2026 — Short CV of the presenter (conference booklet)



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The Cost of Decision-Model Simplifications in PV–Battery Microgrid Energy Management

Jonathan Ntiaka Muzakwene is a PhD student at LAAS-CNRS, Université de Toulouse, France, in partnership with ICAM Toulouse and under a joint (cotutelle) doctoral agreement with the Institut Ucac-Icam, Douala, Cameroon. His thesis addresses the energy management of microgrids and multi-microgrids from the component level (distributed energy resources, loads, power-electronic interfaces) to the system level (the electrical grid): the architecture and structure of the EMS, the modelling of the plant and of the decision problem, and the optimization and solution methods, from input data to validated results. The ICRERA 2026 paper measures, on a widely reused open PV–battery demonstration model, the operating-cost impact of the standard simplifications of an EMS decision model by co-simulating the optimizer with its original MATLAB/Simulink plant. His doctoral work is supported by the PEACIPASTI project, funded by the French National Research Agency (ANR) and the French Development Agency (AFD).

He holds the General Engineering Degree (2013) of the Institut UCAC-ICAM, Catholic University of Central Africa, Douala, Cameroon. Since 2016 he has been a lecturer at the ULC-Icam Faculty of Engineering, Loyola University of Congo, Kinshasa, where he headed the Polytechnique Générale department, the Icam “Bachelor international” first cycle shared by the Icam campuses, from 2019 to 2023. He teaches power systems and distributed renewable generation (photovoltaic and hybrid energy systems), power electronics, dynamic systems and control, operations research, and industrial engineering and project management. He also has over ten years of industrial experience in oil and gas and, most recently, with BRACONGO SA (Castel group), Kinshasa, in continuous improvement and operational excellence, including the optimization of the brewery's fluids and energy utilities.