

SMART GRIDS DEPLOYMENT FOR EXTREME ENVIRONMENTS: THE ANTARCTIC CASE

Journées des Etudiants du GERAD - Mardi 11 avril 2017 - Salle Trois Rivières - HEC Montréal

- Academic Profile
- The Theme and Previous Works
- The PhD Research

MSc. Tiago Malavazi de Christo
PhD Student at UFES/HEC
Professor at IFES - tmalavazi@ifes.edu.br
<http://lattes.cnpq.br/0212358966533173>
GERAD - Office 4454

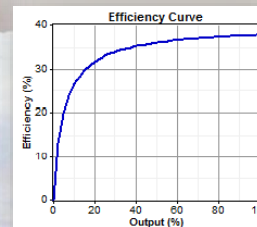
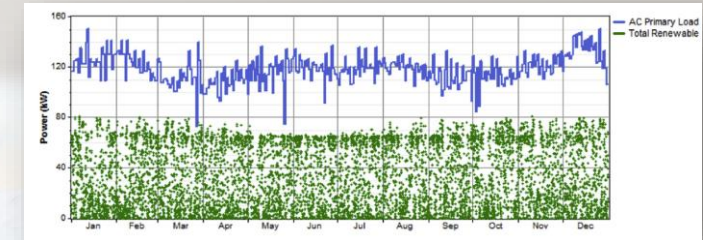
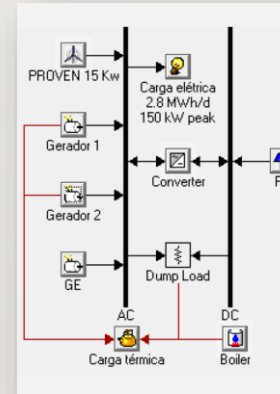
ACADEMICAL PROFILE

- Graduated in Electrical Engineering – completed in 2008
- MSc. In Electrical Engineering – completed in 2012
- PhD Student at UFES/HEC – in course
- Professor at IFES - Brazil – since 2010
- Researcher of ARQUIANTAR - INCT-APA – since 2009



THE THEME AND PREVIOUS WORKS: ENERGY IN EXTREME PLACES

- Master dissertation
 - An Hybrid Power Plant Proposal for the Commander Ferraz Antarctic Station: An experience applicable to new buildings
- Publications
 - Design and analysis of hybrid energy systems: The Brazilian Antarctic Station case, Renewable Energy, Volume 88, April 2016, Pages 236-246, ISSN 0960-1481, <http://doi.org/10.1016/j.renene.2015.11.014>.
- Consulting
 - Term Of Reference for the New Antarctic Station

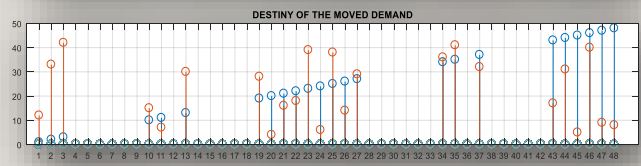
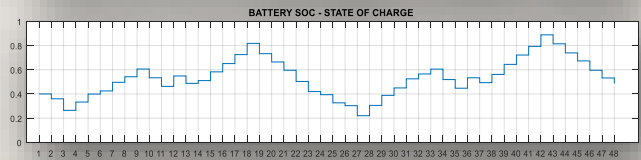
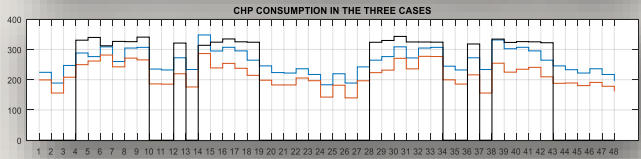
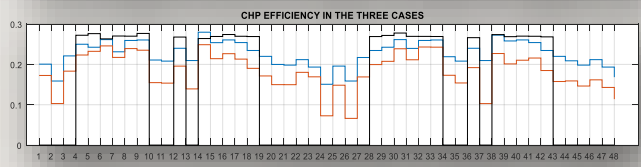
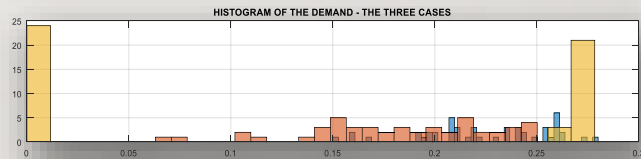
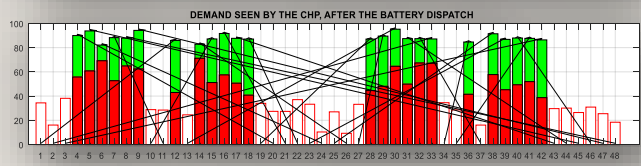
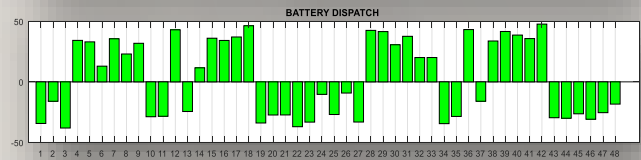
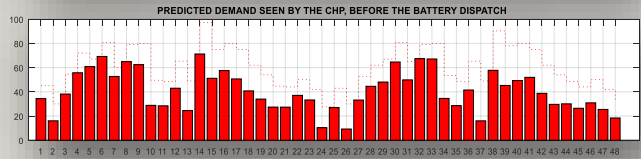
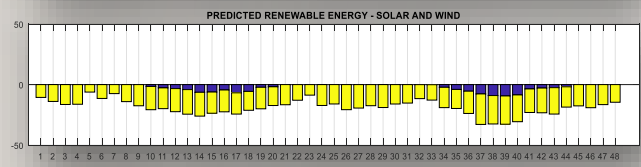
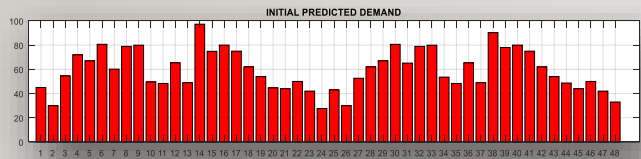


PERÍODO ANALISADO (1994 A 2006)	WEIBULL k	WEIBULL c [m/s]	DENSIDADE DO AR [kg/m ³]
Janeiro	1,47	5,34	1,25
Fevereiro	1,55	6,15	1,25
Março	1,53	6,52	1,26
Abril	1,49	6,71	1,27
Mai	1,46	6,44	1,28
Junho	1,41	7,11	1,29
Julho	1,38	7,30	1,30
Agosto	1,41	8,19	1,28
Setembro	1,37	7,42	1,29
Outubro	1,59	7,64	1,27
Novembro	1,52	6,44	1,26
Dezembro	1,51	6,01	1,26
TODO O PERÍODO	1,45	6,72	1,27

THE PHD RESEARCH: SMART GRID DEPLOYMENT UNDER EXTREME CONDITIONS

- Add advanced management concepts to the Micro Grid
- Extreme conditions – Storms, Sources fault, Rationing, Short prediction horizon...
- Main Objectives – Minimize the consumption, Maximize the plant life and Security
- Based on day ahead predictions
- Isolated Hybrid power plant – Wind, Solar, Combined Heat and Power
- Comparison between Dynamic Programming and other Optimization Methods

THE PHD RESEARCH: SMART GRID DEPLOYMENT UNDER EXTREME CONDITIONS



Thank You!

MSc.Tiago Malavazi de Christo
PhD Student at UFES/HEC
Professor at IFES - tmalavazi@ifes.edu.br
<http://lattes.cnpq.br/0212358966533173>
GERAD - Office 4454