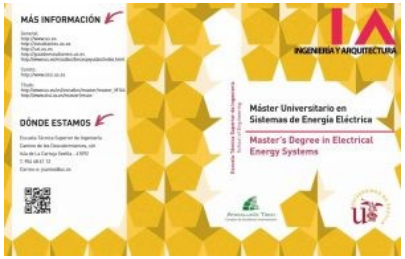
Programa de Doctorado Interuniversitario en "Sistemas de Energía Eléctrica"

Convenio de colaboración entre las universidades de Sevilla, País Vasco, Málaga y Politécnica de Cataluña para llevar a cabo, conjuntamente, la organización y desarrollo de las enseñanzas de doctorado en "Sistemas de Energía Eléctrica"

https://institucional.us.es/doctoradosee/

Máster Universitario en "Sistemas de Energía Eléctrica"



http://departamento.us.es/ielectrica/master-see/

Haga clic aquí para registrarse

WEBINAR

Prof. Jalal Kazempour

Head of Section, Energy Markets & Analytics
DTU Wind and Energy Systems Department
Division for Power and Energy Systems

Title

"Coordination of electricity, heat, and natural gas systems accounting for network flexibility "

Departamento de Ingeniería Eléctrica
Escuela Técnica Superior de Ingeniería
Camino de los Descubrimientos s/n
41092 Sevilla (España)
http://departamento.us.es/ielectrica

WEBINAR

"COORDINATION OF ELECTRICITY, HEAT, AND NATURAL GAS SYSTEMS ACCOUNTING FOR NETWORK FLEXIBILITY "

ORGANIZAN:

Cátedra Endesa de la Universidad de Sevilla

&

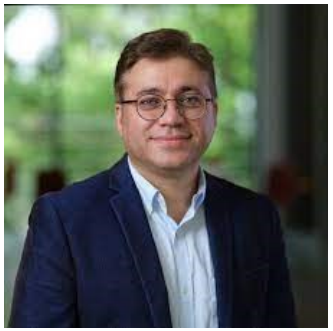
Cápitulo Español de IEEE Power & Energy Society

Día: 19 de enero de 2023

Hora: 18:00 h.

Dpto. Ingeniería Eléctrica
ETS de Ingeniería
Universidad de Sevilla

Title: Coordination of Electricity, Heat, and Natural Gas Systems Accounting for Network Flexibility.



Prof. Jalal Kazempour

Head of Section, Energy Markets & Analytics
Wind and Energy Systems Department
Division for Power and Energy Systems

Technical University of Denmark - DTU

Abstract:
Existing energy networks can foster the integration of uncertain and variable renewable energy sources by providing additional operational flexibility. In this direction, we propose a combined power, heat, and natural gas dispatch model to reveal the maximum potential "network flexibility", corresponding to the ability of natural gas and district heating pipelines to store energy. To account for both energy transport and linepack in the pipelines in a computational efficient manner, we explore convex quadratic relaxations of the nonconvex flow dynamics of gas and heat. The resulting model is a mixed-integer second-order cone program. An ex-post analysis ensures feasibility of the heat dispatch, while keeping the relaxation of the gas flow model sufficiently tight. The revealed flexibility is quantified in terms of system cost compared to a dispatch model neglecting the ability of natural gas and district heating networks to store energy.

Bio:
Jalal Kazempour received the Ph.D. degree in Electrical Engineering from the University of Castilla-La Mancha, Ciudad Real, Spain, in 2013. He is currently an Associate Professor and the Head of "Energy Markets and Analytics" Section with the Department of Wind and Energy Systems, Technical University of Denmark (DTU), Kongens Lyngby, Denmark. He is interested in data-driven and market-oriented approaches to power system operation and planning, also in coordination with other energy systems His research interests include intersection of multiple fields, including power and energy systems, electricity markets, optimization, game theory, and machine learning.