Title (en)

EFFICIENT SECURITY-CONSTRAINED OPTIMAL POWER FLOW (SC OPF) ANALYSIS USING CONVEXIFICATION OF CONTINUOS VARIABLE CONSTRAINTS WITHIN A BI-LEVEL DECOMPOSITION SCHEME

Title (de)

EFFIZIENTE SC OPF-ANALYSE MIT KONVEXIFIZIERUNG VON KONTINUIERLICH-VARIABLEN EINSCHRÄNKUNGEN IN EINEM DEKOMPOSITIONSSCHEMA MIT ZWEI EBENEN

Title (fr)

ANALYSE EFFICACE À FLUX OPTIMUM DE PUISSANCE SOUS CONTRAINTE DE SÉCURITÉ (SC OPF) EN UTILISANT UNE CONVEXIFICATION DE CONTRAINTES VARIABLES CONTINUES AU SEIN D'UN SYSTÈME DE DÉCOMPOSITION BI-NIVEAU

Publication

EP 2545487 A4 20150916 (EN)

Application

EP 11712704 A 20110225

Priority

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- US 2011026157 W 20110225

Abstract (en)

[origin: WO2011112365A2] A scheme is presented that utilizes the convexification of continuous variables in the modeling of the Security-Constrained Optimal Power Flow (SC-OPF) problem to create discrete variables that allow for column-generation tools to be used in the solution of the SC OPF problem. One such relation is the voltage law relation for AC branch control flows, and the convexification utilizes a complex plane representation to create a convex solution of discrete values that can be used to perform a feasibility analysis of the various contingency cases. As a result of the convexification, analysis tools, such as column-generation decomposition associated with discrete variables are available for use in solving the SC OPF problem and increase the efficiency and accuracy of the solution.

IPC 8 full level

H02J 3/00 (2006.01)

CPC (source: EP US)

H02J 3/001 (2020.01 - EP US); G06F 30/20 (2020.01 - EP); G06F 2119/06 (2020.01 - EP); H02J 2203/20 (2020.01 - EP US); Y02E 40/70 (2013.01 - EP); Y02E 60/00 (2013.01 - EP); Y04S 10/50 (2013.01 - EP); Y04S 40/20 (2013.01 - EP)

Citation (search report)

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- [A] JP 2007325379 A 20071213 - CENTRAL RES INST ELECT
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Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

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