

Title (en)
A CENTRALIZED MODEL PREDICTIVE LIGHTING CONTROL METHOD AND A CENTRALIZED PREDICTION-BASED CONTROLLABLE STREET LIGHTING SYSTEM

Title (de)
VERFAHREN ZUR PRÄDIKTIVEN BELEUCHTUNGSSTEUERUNG MIT ZENTRALISIERTEM MODELL UND STEUERBARES STRASSENBELEUCHTUNGSSYSTEM AUF BASIS VON ZENTRALISierter VORHERSAGE

Title (fr)
PROCÉDÉ DE COMMANDE D'ÉCLAIRAGE PRÉDICTIF DE MODÈLE CENTRALISÉ ET SYSTÈME D'ÉCLAIRAGE PUBLIC CONTRÔLABLE BASÉ SUR UNE PRÉDICTION CENTRALISÉE

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Application
EP 22020553 A 20221114

Priority
EP 22020553 A 20221114

Abstract (en)
The present invention relates to a centralized model predictive lighting control method for one or more streetlamps and a system thereof, particularly to creating a lighting, which dynamically adjusts a light intensity thus improving a comfort level of visibility for vehicles, pedestrians, cyclist, etc., in variable weather conditions, while minimizing an energy consumption of a system simultaneously. The method predicts the light intensity at a predetermined set of points of interest p in a space over a prediction horizon N with a time resolution of T_{s} and adjusts the light intensity of the streetlights according a predetermined streetlight dimming scenario and by implementing a Model Predictive Control (MPC) algorithm configured to control light intensities of one or more streetlamps. The MPC algorithm performs minimizing an objective function over the prediction horizon N with the time resolution of T_{s} , the objective function comprising calculating light intensity, light pollution, and deviation from the desired lighting at the predetermined set of points of interest p considering calculated constraints.

IPC 8 full level
H05B 47/105 (2020.01); **G05B 17/02** (2006.01); **H05B 47/115** (2020.01); **H05B 47/19** (2020.01)

CPC (source: EP)
H05B 47/105 (2020.01); **H05B 47/115** (2020.01); **H05B 47/19** (2020.01)

Citation (applicant)

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Cited by
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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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR

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