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Fakultät für Mathematik
Oskar-Morgenstern-Platz 1
A-1090 Vienna
Austria

<https://owos.univie.ac.at>

ONE WORLD OPTIMIZATION SEMINAR

June 22nd, 2020 @ 15:00 CEST (Central European Summer Time)

CLAUDIA SAGASTIZÁBAL

(University of Campinas)

Revisiting Augmented Lagrangian Duals

Abstract. For nonconvex optimization problems, possibly having mixed-integer variables, a convergent primal-dual solution algorithm is proposed. The approach applies a proximal bundle method to a certain augmented Lagrangian dual that arises in the context of the so-called generalized augmented Lagrangians. We recast these Lagrangians into the framework of a classical Lagrangian, by means of a special reformulation of the original problem. Thanks to this insight, the methodology yields zero duality gap. Lagrangian subproblems can be solved inexactly without hindering the primal-dual convergence properties of the algorithm. Primal convergence is ensured even when the dual solution set is empty. The interest of the new method is assessed on several problems, including unit commitment in energy optimization. These problems are solved to optimality by solving separable Lagrangian subproblems.

The talk is based on joint work with Marcelo Cordova and Welington de Oliveira.

The link of the zoom-room of the meeting and the corresponding password will be announced the day before the talk on the mailing list of the seminar, to which one can subscribe on <https://owos.univie.ac.at>.