

## ANUNCIO DE SEMINARIO

Día: Martes 14 de Agosto de 2018  
Hora: 10:30  
Lugar: Sala de Planta Baja de INGAR – Avellaneda 3657  
Tema: **Second order cuts for Outer Approximation algorithm**

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### **Abstract**

This talk presents scaled quadratic cuts based on scaling the second-order Taylor expansion terms for the decomposition methods Outer-Approximation and Partial Surrogate Cuts for solving convex Mixed Integer Nonlinear Programming problems. The scaled quadratic cut is proved to be a stricter and tighter underestimation for convex nonlinear functions than classical supporting hyperplanes, which results in the improvement of Outer Approximation and Partial Surrogate Cuts based solution methods. We integrate the strategies of scaled quadratic cuts with multi-generation cuts for Outer Approximation and Partial Surrogate Cuts and develop six types of Mixed Integer Nonlinear Programming solution methods with scaled quadratic cuts. These cuts are incorporated in the master problem of the decomposition methods leading to a Mixed-Integer Quadratically Constrained Programming problem. Numerical results of benchmark Mixed-Integer Nonlinear Programming problems demonstrate the effectiveness of the proposed Mixed-Integer Nonlinear Programming solution methods with scaled quadratic cuts.

(La conferencia será dictada en castellano)