Civil Systems Special Seminar

Dr. Miguel F. Anjos
presenting

Improved Mixed Integer Linear Optimization Formulations for Unit Commitment

March 4, 2014, 5:00 – 5:45 pm

University of Maryland, College Park, Maryland 20742

Engineering Laboratory Building (EGL) room number 1202

**Light snacks and refreshments will precede the lecture from 4:30 – 5:00 pm
contact: Andy Blohm, andymd26 AT umd.edu

Abstract: We present two ways to improve the mixed-integer linear optimization formulation for the unit commitment problem. The first is a new class of inequalities that give a tighter description of the feasible generator schedules. The second is a modified orbital branching technique that exploits the symmetry created by identical generators. Computational results show that these approaches can significantly reduce overall solution times for realistic instances of unit commitment.

Bio: Miguel F. Anjos is Full Professor and Canada Research Chair in the Department of Mathematics & Industrial Engineering of Polytechnique Montreal, where he currently serves as Interim Director of the new Trottier Energy Institute. He received his degrees from McGill University, Stanford University, and the University of Waterloo. His research interests are in the theory, algorithms and applications of mathematical optimization. He is particularly interested in the application of optimization to problems in power systems management and smart grid design. He is Editor-in-Chief of Optimization and Engineering and serves on the editorial boards of Discrete Applied Mathematics, RAIRO-OR, and Surveys in Operations Research and Management Science. He currently serves on the Council of the Mathematical Optimization Society. He is also a member of the Research Review Committee of Mitacs. He received the Meritas Teaching Award from Ecole Polytechnique in 2012. He was awarded a Humboldt Research Fellowship for Experienced Researchers in 2009, and the Queen Elizabeth II Diamond Jubilee Medal in 2013 for significant contributions to mathematical optimization and its industrial applications.