

# Regularized HPE-type methods for solving monotone inclusions with improved pointwise iteration-complexity bounds and their regularized ADMM variants

Renato Monteiro <sup>1</sup>

<sup>1</sup> Georgia Institute of Technology

## Resumo/Abstract:

In this talk, we discuss the iteration-complexity of new regularized hybrid proximal extragradient (HPE)-type methods for solving monotone inclusion problems (MIPs). The new methods consist of instances of the standard HPE method applied to regularizations of the original MIP. It is shown that its pointwise iteration-complexity considerably improves the one of the HPE method while approaches (up to a logarithmic factor) the ergodic iteration-complexity of the latter method. Applications of these ideas in the context of the alternating direction method of multipliers for solving linearly constrained convex programs will also be discussed.