

THE UNIVERSITY



OF HONG KONG

*Institute of Mathematical Research  
Department of Mathematics*

## Seminar

# Safeguarded augmented Lagrangian methods for nonconvex optimization: convergence, complexity and experiments

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### Abstract

Safeguarded augmented Lagrangian methods are suitable tools for solving nonconvex nonlinear programming problems. Their convergence theory, based on weak assumptions, is well understood, even in the case of infeasible problems. Iteration and evaluation complexity results are also known. But it is their practical advantages that make them attractive to tackle real-world problems. On the one hand, implementations that exploit second-order information, and some that even possess convergence to second-order stationary points, are available. On the other hand, however, it is the first-order matrix-free implementations that can more efficiently deal with real-world large-scale problems. This talk will cover both theoretical and practical elements and applications of the augmented Lagrangian method AlgenCAN. In particular, recent complexity results and a comprehensive numerical comparison will be reported.

Date:	January 15, 2024 (Monday)
Time:	4:30 – 5:30pm
Venue:	Rm 210, Run Run Shaw Bldg., HKU

*All are welcome*