



भारतीय प्रबंध संस्थान बेंगलूर
INDIAN INSTITUTE OF MANAGEMENT
BANGALORE

**The Decision Sciences Area at IIM Bangalore welcomes you to a
webinar, titled:**

Convexification for Non-Convex Mixed-Integer Quadratic Programming



by

Dr. Samuel Burer

Date: 09th March, 2022

Time: 06:30 p.m. to 07:30 p.m.

Abstract:

Convexification is an important technique used for solving non-convex mixed-integer quadratic programs. We discuss three recent convexification results for nonconvex quadratic programming over: (i) bounded (x_1, x_2, x_3) with $x_1 * x_2 = x_3$; (ii) continuous (x_1, x_2) and binary (y_1, y_2) such that $(0, 0) \leq (x_1, x_2) \leq (y_1, y_2)$; and (iii) a ball intersected with a second-order cone. Although these structures may seem quite specialized, they appear as critical substructures in numerous applications. In addition to describing these three results, we survey the landscape---and the current research frontier---of convexification techniques in this area.