

## INTRODUCTION TO SPARSE POLYNOMIAL OPTIMIZATION

### ABSTRACT

In recent years, sparse Moment-SOS hierarchy of semidefinite relaxations has been developed for finding global minimum of polynomial optimization problems with sparsity. In this project, we study some basic properties of sparse Moment-SOS hierarchy and compare it with the dense Moment-SOS hierarchy. Some recent work related to this topic, such as sparse Lagrange multiplier expression, the finite convergence, SOS relaxation with term sparsity, will also be reviewed.

### KEYWORDS

Polynomial optimization, correlative sparsity, Moment-SOS relaxations, Positivstellensatz