

# Bringing You on My Invited Talks

Dr. Anusuya Ghosh

Linear Programming, Non-linear Programming, Integer Programming, Mixed-integer Programming, Semi-definite Programming, Analytics, Mathematical Modeling, Operations Research.

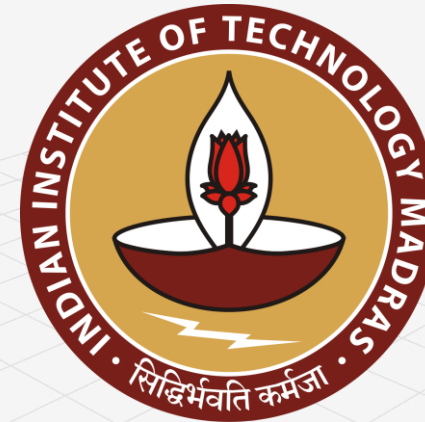
# Compactly SDR Set and Sufficient Conditions for Semi-definite Representation

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@Department of Mathematics, IIT Madras

April 2017

- **Define Compactly SDR Set**
- **Characterize the Polars of SDR Set**
- **Characterize Compactly SDR Set**



**Develop Sufficient Conditions for Convex Set to be Semi-definite Representable**

# Approximation of Convex Set by Semidefinite Representable Set

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@Department of Management Studies, IISc Bangalore

March 2017

- **Approximate a Set  $S$  by Compactly SDR Set**
- **Generate a Sequence of Compactly SDR set**
- **The Sequence converges to  $S$**



**Any Closed Convex Set can be Approximated by SDR Sets**

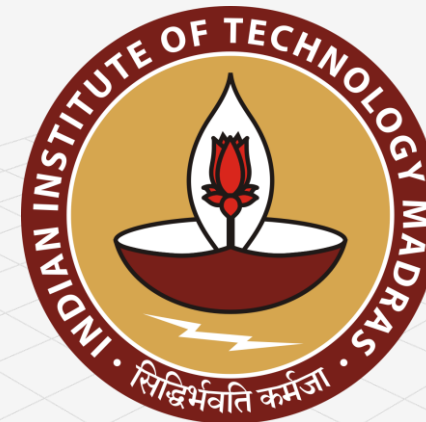
# Sufficient Conditions for Semidefinite Representability

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@Department of Management Studies, IIT Madras

April 2017

- **Characterize the sections of a convex cone**
- **Sufficient conditions for convex cone to be SDP representable.**



**Sufficient Condition for a Convex Cone depends if  $(n-1)$ -sections of the Cone is Compactly SDP Representable**

# The Construction of Semidefinite Representation of Convex Set from its Projections

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@Department of Computer Science and Automation, IISc Bangalore

May 2017

- **Propose a method to construct SDP representation of convex set  $S$**
- **The construction is in  $\mathbb{R}^2$**
- **Generating a sequence of core sets and envelope sets that converge to the convex set  $S$**



**New Construction Method in Semidefinite Programming**

# New Class of Convex Sets in Semidefinite Programming and their Characterization

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@Chennai Mathematical Institute

June 2017

New class of convex sets in semidefinite programming:

- **Compactly SDR Set**
- **Convex Set SDR at a Point**
- **Convex Set SDR away from a point**

Characterize

- **Compactly SDR Set**
- **Convex Set SDR at a Point**
- **Convex Set SDR away from a point**

**Develop Sufficient Condition for Semidefinite Representability**



More questions about my talk?

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