

Rigidity Theory for Robotics, Drug Design and CAD

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ABSTRACT

When designing a bridge, what analysis will minimize the amount of building materials while maintaining stability? Are there computational tools that can help predict protein flexibility, a key component in drug design? How can a swarm of robots work together to collectively transport rubble during a search and rescue mission?

Rigidity theory seeks to answer these questions by studying structural properties from mathematical and computational perspectives. In this talk, I will discuss the fundamental questions considered by rigidity theory and its applications, including those in robotics, structural biology and Computer Aided Design for mechanical engineers.

Lunch is provided.