**Cable-Driven Parallel Robots**

**and Their Applications in Automation**

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In this talk, how to control two different types of cable-driven parallel robots (CDPRs) will be addressed: under-constrained and over-constrained. Cable-driven parallel robots are parallel-link manipulators that are controlled by a bunch of cables each of which acts like a rigid link. Thus, they do not have any heavy rigid links; therefore, they can accelerate their payloads with a high acceleration. Another their advantage is a relatively large workspace. However, due to the nature of flexibility of (steel or polymer) cables, they may exhibits transient and residual oscillations of their payload. In this talk, how to reduce these oscillations will be addressed. Mainly, input shaping and system flatness are the main topics. Also, trajectory planning of payload without collisions with other objects and the cables of the CDPR used are also important in using a CDPR, which will be also addressed. The potential applications of CDPRs in automation of manufacturing and other industries will be also covered in this talk.