

# Engineering/Physics Seminar

Wednesday 4/25/2007, 4:30 pm  
Willet Science Center 101

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## **Coordinated Control of a 12 TET Robot**

The tetrahedral robot architecture produces robots with variable length "struts" that connect "nodes". Each node is connected to at least 4 struts resulting in the relative position of each node being determined by at least 4 distances. This is clearly an over constrained situation. This talk considers the control engineering implications of the additional constraints(s) and suggests one solution. That is, consider three struts as "master struts", the rest as "slave struts", and implement for each strut a decentralized adaptive controller. The input to the master struts can be nearly arbitrary, whereas the input to the slave struts must be coordinated with that of the master struts. The Adaptive control algorithm allows for small errors between the desired positions of the slave struts relative to the master struts and the actual relative positions.

*Please join us for light refreshments at 4:15pm outside WSC 109.*