GEOMETRIC ATTITUDE AND POSITION TRACKING OF 2 QUADROTORs CARRYING A RIGID ROD

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ABSTRACT: In this talk, I will first introduce a model for two quadrotors carrying a rigid bar suspended by elastic cables. Then I will derive the dynamics from variational principles in mechanics. Using singular perturbations, as is usually dealing with slow and fast variables, I will derive a reduced model to have stiff cables with high damping as it is usual in practice. Finally, I will explain the development of geometric control laws for tracking the bar to a desired position and attitude based on the attitude and thrust applied to the quadrotors.