ME 115(b) Final Projects

Like last quarter, students can choose to do a final project instead of taking a written final exam. Below are some suggestions for the ME 115(b) final project. Alternatively, you can select your own project, subject to my approval. While I would prefer individual projects, group projects are allowed with my consent. The quality of the group projects should be proportional to the number of students involved.

Suggestions:

1. **Simulate the contact equations.** Good candidates would be an ellipse on a sphere. This would consist not only of an implementation of the rolling equations, but a graphical simulation of two bodies as well. The use of Mathematica is highly suggested.
2. **Simulate a redundancy resolution scheme.** In a previous homework, you simulated the simplest pseudo-inverse redundancy resolution scheme. Try simulating a more complicated scheme which includes a null space projection term. Candidate criteria for null space projection criteria are obstacle avoidance and/or manipulability optimization.
3. **Develop a method to find the singularities of a Stewart Platform Mechanism.**

Final Project Grading and Time Table

Both the final project and the take home final exam are due at 5:00 pm on the last day of finals. Students electing to undertake a final project must submit a preproposal by Thursday, March 1, 2001. The 1-2 page preproposal will describe the project, the methods that you will use to solve the project's problem, and the "deliverables."