Project 6: Rate Gyros and Damping Control
Questions?
Project 5

• Demos by Friday
• Catme surveys by Tuesday
Project 6

1. Add a rate gyro sensor

2. Software:
   • Access function: read_rotation_rate()
   • Control: derivative_control()
   • Interrupt service routine: use exactly as we provide
   • Main:
     • Hover for 30 seconds while resisting rotation
     • Use the template that we provide

3. Layout: balance hovercraft

4. Testing
Damping Control

In order to resist rotation, we will drive the left/right fans to produce torque in the opposite direction as rotational motion

- Positive rotation: drive right fan proportional to rotation rate
- Negative rotation: drive the left fan

See specification for implementation details
Notes

• This project is more involved than previous projects
  • You can’t start the day before the deadline and complete on time

• Implement and test components incrementally
Next Time

Proportional-derivative control