Course Announcement

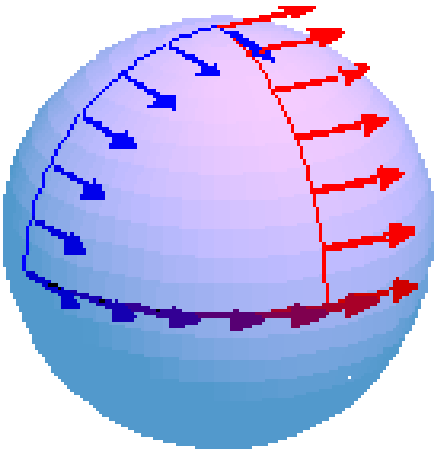
APM 581 Geometry & Control of Dynamical Systems

https://math.la.asu.edu/~kawski/classes/apm581/18sprg/apm581.html

Instructor: Matthias Kawski, http://math.asu.edu/~kawski

Spring 2018, line number 30665

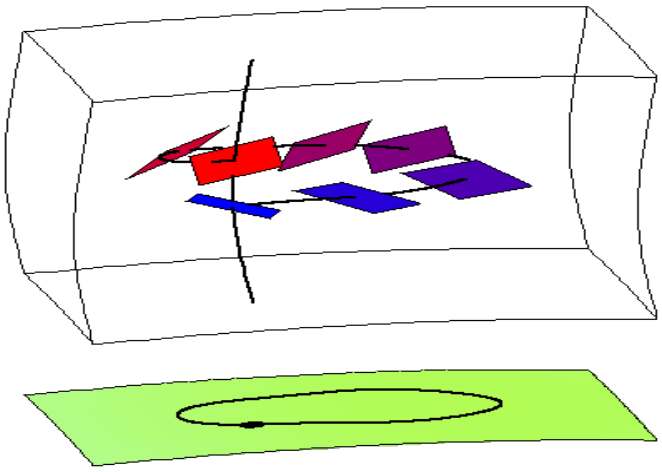
TuTh 12:00-1:15 WXLR A311



Topics include:

- **"Intrinsic" and "geometric" properties**
- **Systems on manifolds**
- **Equivalence under diffeomorphisms**
- **Tangent bundle, cotangent bundle and tensor fields**
- **Lie derivatives, Lie algebras, and integrability**
- **Controllability and observability**
- **Feedback equivalence and normal forms**
- **Feedback stabilizability and topological constraints**.

Designed for an audience of graduate (and advanced undergraduate) students in math, physics, engineering… Anyone who encounters the effects of curvature in any dimension, who wants to do more with differential equations & dynamical systems than just watch where they go: Control is about making them go where you want them to go, study where you can make them go, go there optimally!



Prerequisites: Multi-variable/advanced calculus, advanced diff. equns. or consent of instructor
Text: Instructor's lecture notes. Further references: A. Isidori, Nonlinear control, and M.Spivak: A comprehensive intro to differential geometry vol. 1.

The class will accommodate special interests and will be project oriented, from abstract geometry to control applications in mechanics, physics, math-biology, bio-medicine…..
If interested, please contact the instructor as soon as possible at **kawski@asu.edu.**