

Keio Workshop on Robotics and Control

Researches on Control in Department of
Applied Physics and Physico-Informatics
and
Activities of Adachi Laboratory



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Science and Technology
Keio University

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Today's Talk

- Department of Applied Physics and Physico-Informatics
 - Purpose of our Department
 - Education for Undergraduate Students
- Activities of Adachi Lab.
 - Application of System Identification Theory to Automobile Industry
 - Active Noise Control
 - Active Safety System for Automobile



Purpose of our Department

- Creating a livable climate means balancing the complex relations among manmade information, technology, and economics with the natural environment of our planet **within the framework of physical principles**.
- Understanding these components and developing new methods to interpret and ultimately to resolve conflicting forces are the major objectives of our educational and research endeavors.

But, I have just moved to Keio University this April, I do not familiar with our department ???



What kind of study?

■ Modern Applied Physics

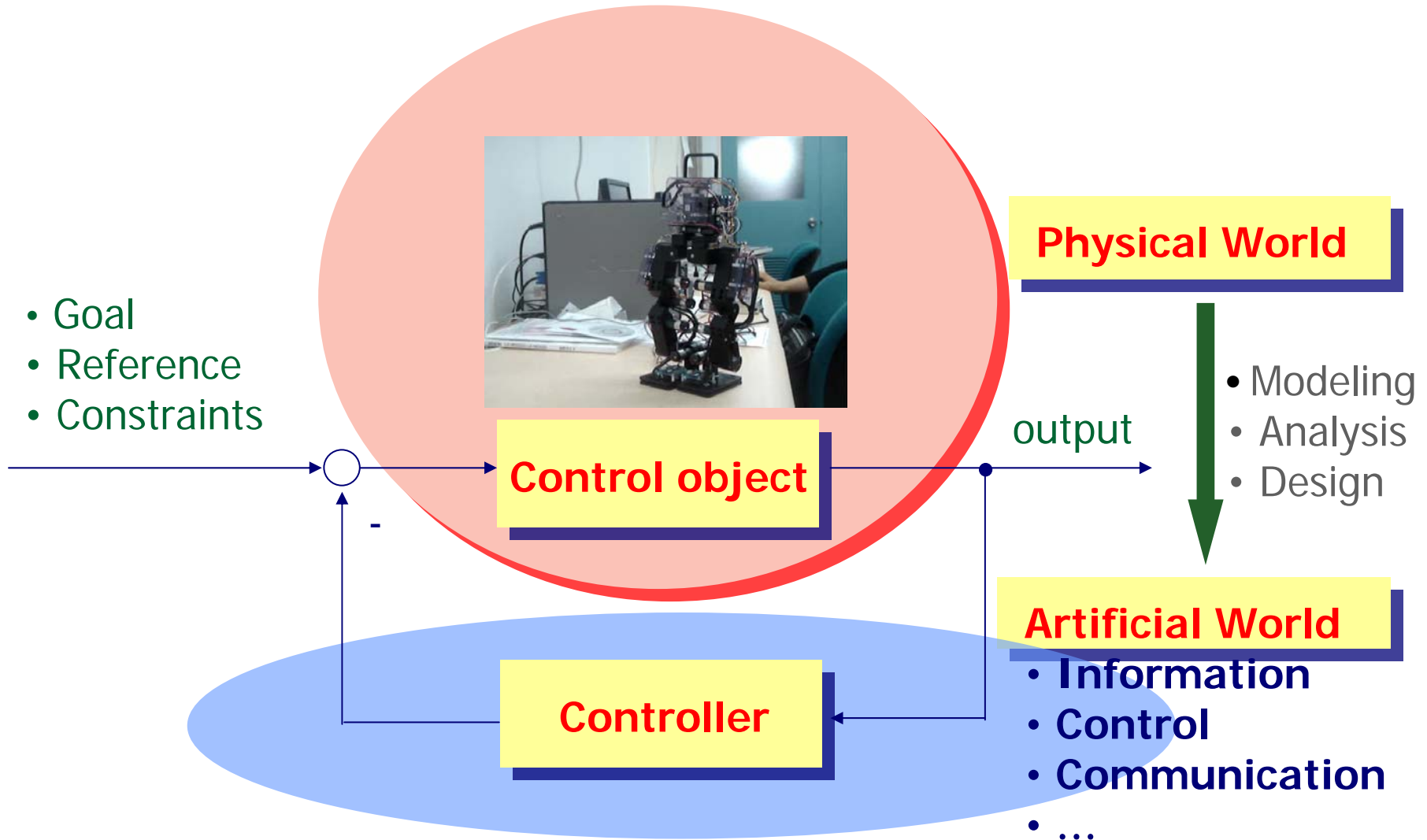
- Measurement and **Control engineering**
- Materials physics
- Biomedical engineering

■ Applied Physics and Physico-Informatics

- **Applied Physics** : Application of physical principles to numerous fields in science and technology
- **Physico-Informatics** : Importance of the advanced mathematical analysis of information governed by the laws of physics



Physics and Information → Cybernetics



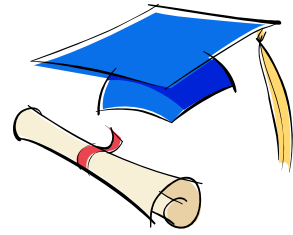
Block diagram in Control Engineering

Educational Goal

- Our undergraduate curriculum is designed to educate highly capable scientists and engineers with strong backgrounds in fundamentals of **physics** and **electrical engineering**.



Education on Control Engineering



- **1st year** : Physics, Mathematics, and Chemistry
- **2nd to 4th year**
 - Signals and Systems (Data acquisition and Analysis, Signal Processing)
 - **Control Engineering** (3rd : Spring term)
 - **Modeling and System Identification** (3rd : Autumn term)
 - Laboratory experiments
- **4th year**
 - Course teaching oral and written presentation techniques in both Japanese and English.
 - **Senior Project**



Thank you for your kind attention.

Please enjoy Keio University and Japan.