Summary

- research: modeling of flexure hinge based positioning stage
- Introduction course is useful to adapt to Japanese life
- Keio University has a special health insurance for students
- Japanese life is challenging:
  - level of English is sometimes very low
  - social contacts: be independent and active (break the ice)
  - life in Japan is expensive
- Student life:
  - university is always open
  - level is not very high
  - Japanese students are less personal developed
- Japanese people are used to live in a group

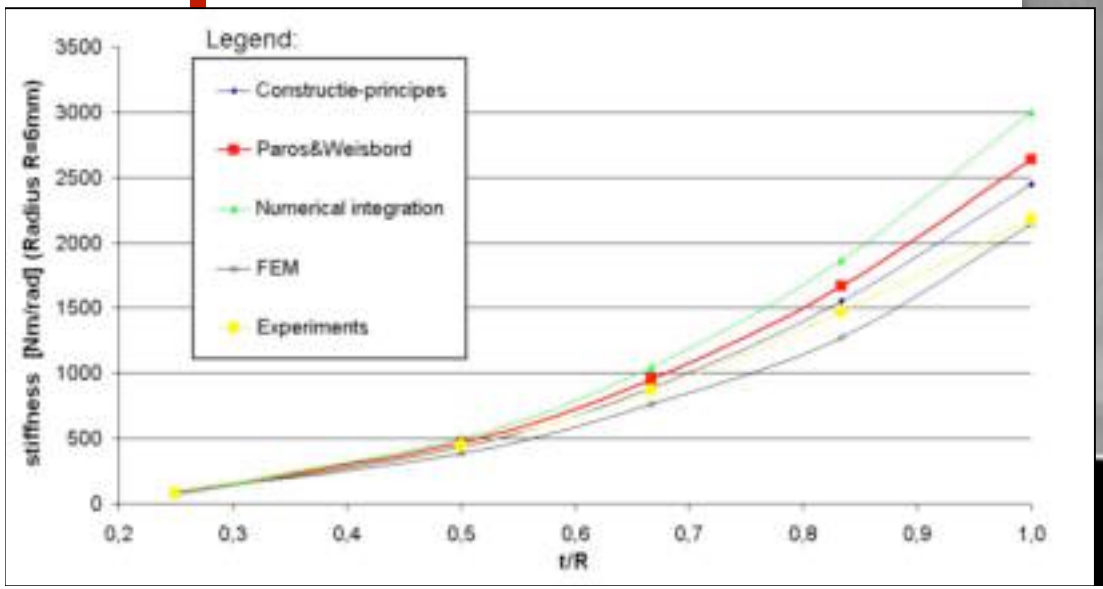
Research

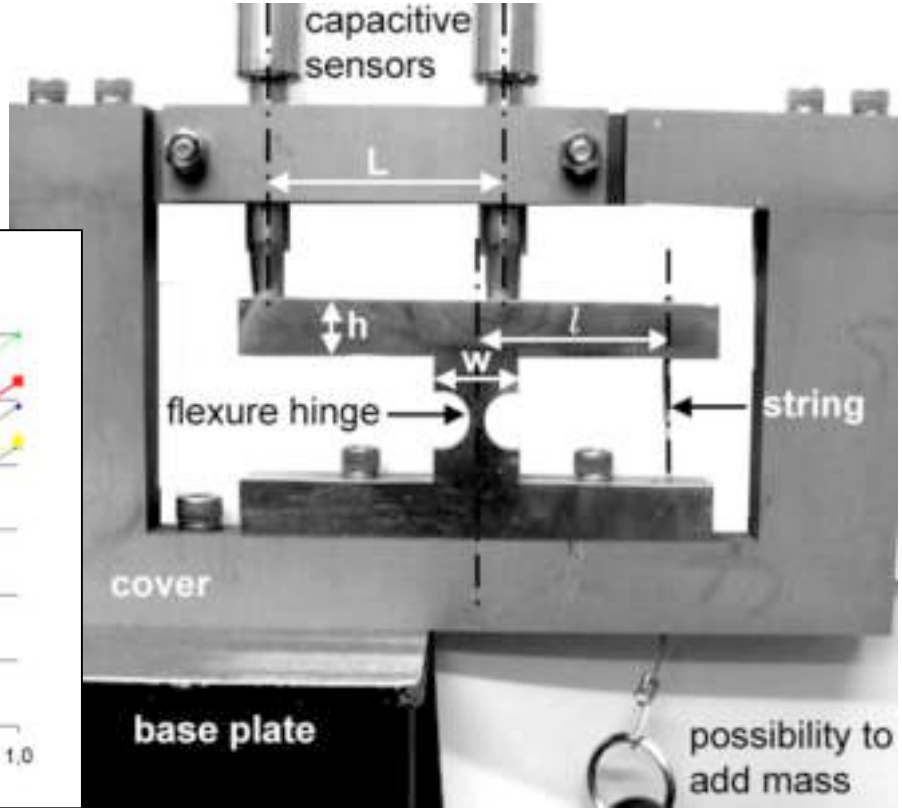
Main goal:

Creating static models of flexure hinge mechanisms

Single hinge stiffness:

- 2 models from literature
- Analytical method solved by numerical integration
- Finite element software
- Experiments





Research

- Stiffness of mechanisms:
  - energy model (mechanical work = potential energy)
  - finite element models by hand and software
- Piezo actuator
  - analytical model
  - finite element model by software

Conclusions:

- theoretical model of ‘Constructie principes’ provides 10% accuracy
- for relatively stiff hinge mechanisms modeling accuracy of 40% should be acceptable
- accurate modeling takes a lot of time
- increasing stiffness modeling accuracy by:
  - including beam stiffness
  - including shear force in hinges
- piezo actuator should be installed without preload and no bending

Exchange student life

Social life

- all Japanese people behave very kind and polite
- Japanese students have less personal life
- to realize social contacts you should be independent and active
- joining a hobby club can be useful to make social contacts
- Japanese people are used to live in a group

At the university

- first week Japanese students made a lot of time for helping
- University has a lot of money to realize a research device
- every student has to realize a working device (not only designing)
- level of English knowledge can be very low
- Japanese students make ‘personal’ fun at the university
- students like to have a party but it should be planned well in advance