PH3521701 现代原子物理 **2019-05-28**

Lecture summary

- Paul trap
  - Micromotion and drift motion
- Quadrupole mass spectrometer

Homework

1. Textbook exercise (12.2) Paul trap.

2. Watch the video of an inverted pendulum:
   http://v.youku.com/v_show/id_XNjQ3MDY0OTEy.html?from=s1.8-1-1.2
   a. Based on the video, what is the fast up-and-down oscillation frequency of the pivot point?
   b. What is the slow left-and-right oscillation frequency of the pendulum?
   c. What is the dependence of the slow frequency on the fast frequency? In other words, what is the relationship between the two?
      Hint: Use the technique of separating fast and slow motion as discussed in Friday's lecture.

Reading Assignments:

Electromagnetic traps for charged and neutral particles
Wolfgang Paul's Nobel lecture, Review of Modern Physics **62**, 531 (1990).

In-lab Classes: 16:00 – 18:00, May 31, Friday
集合点：西区，科技实验楼，一楼大厅

Final Exam (tentative time): 9:00 – 11:00 am, June 16, Sunday