

Week 11 - #2

Lagrangian and Hamiltonian Dynamics (IV)



Today: Ch 7.10-7.13

Next Class: Ch 8.1-8.4, 8.6

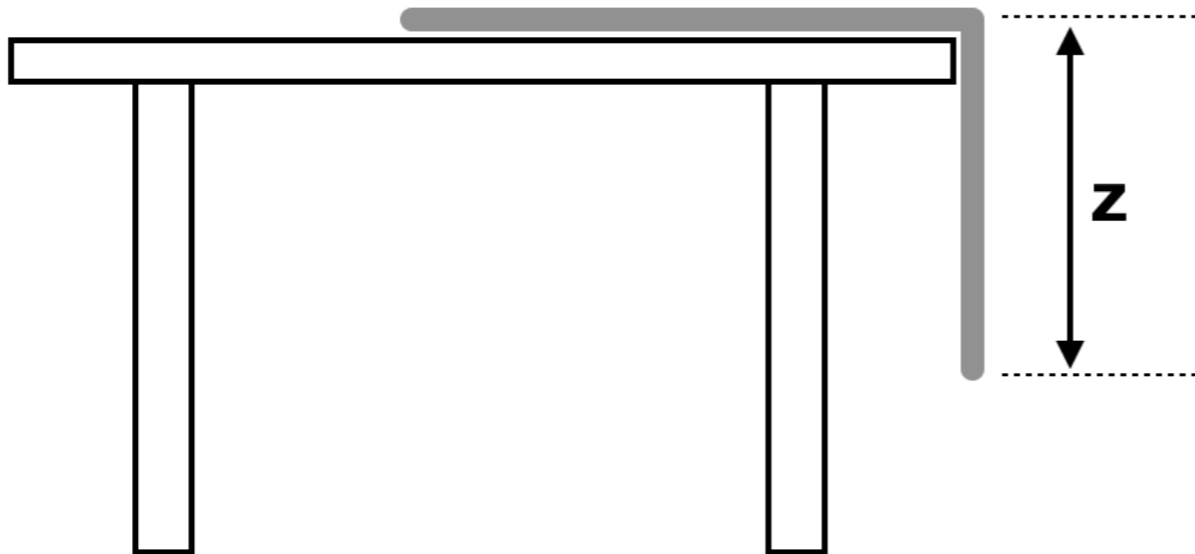
Ji-hoon Kim (Seoul National University)

Classical Mechanics I (Spring 2026): Quiz #19

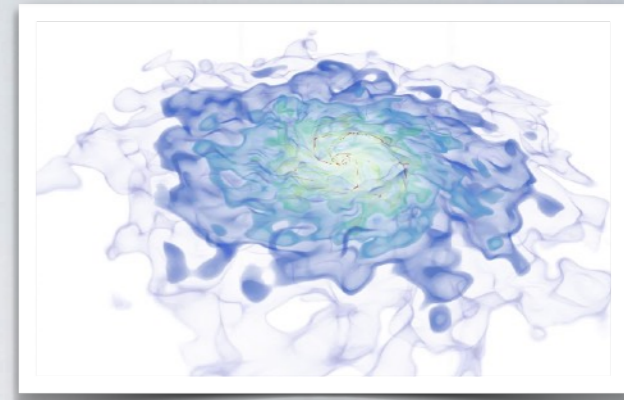
— [open book and open note, cellphone or laptop **allowed**, drop it off as you leave the class] —

Please write down your name and student ID in the top right corner. (0.0 pt: no paper found with your name / 0.5 pt: paper found with your name and some answers / 1.0 pt: good answers)

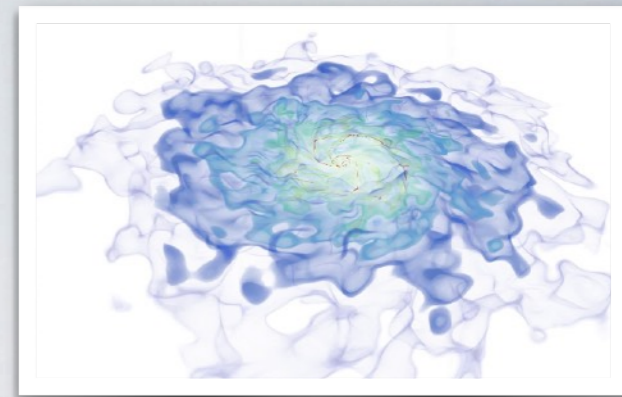
1. Thornton & Marion, Problem 7-39 (* limber = flexible).
2. What exactly is Noether's theorem? Describe it both qualitatively and mathematically. This time you can use your cellphone or tablet to search the internet (though not necessary).



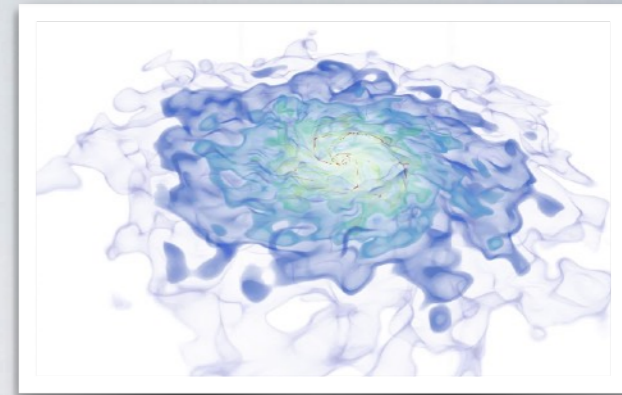
Emmy Noether (1882-1935)



**No In-Person Class on 5/19-28
(3 Recorded Lectures on eTL)**



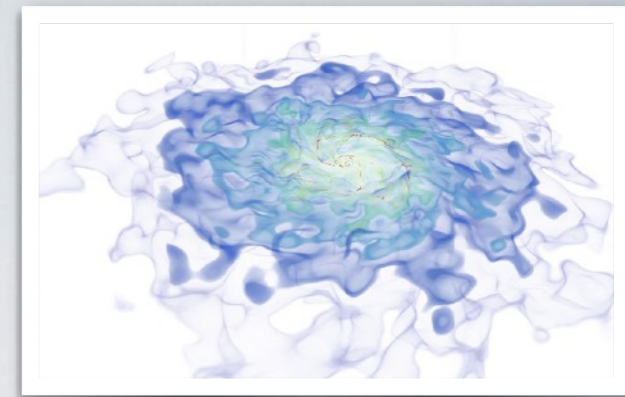
No TA Sessions In Week of 5/25



No TA Session on Jun. 3



Make-up TA Session on Jun. 1 (Mon)



Three Deadlines Before We Meet In Person On 6/2

Term Project Presentation (Jun. 9)

- **Drag and drop** your slides as images **by 23:00pm, May 31 (Sun)** on a shared Google document below:

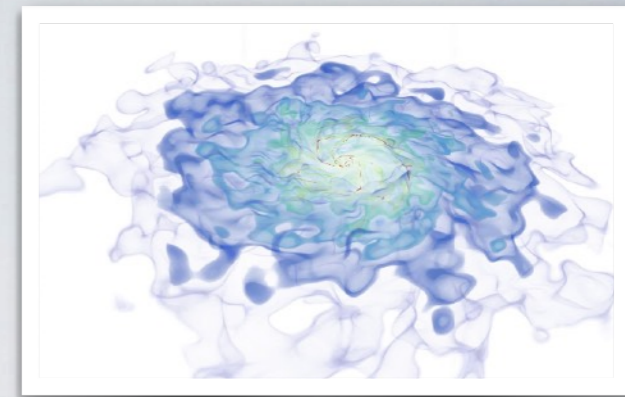
<https://docs.google.com/presentation/d/17HFeWg4uImH6Z-aXDSWxQhRqoiKSGJgDXc89C2qHRRg>

The screenshot shows a Google Slides presentation editor. The browser address bar displays the URL: <https://docs.google.com/presentation/d/1WDKFsYAo0a42OzpZAp6urkgAY2rFX6uqJhAfLvp...>. The slide thumbnail pane on the left shows a sequence of slides: slide 1 is blank with the text 'Student Name: John Doe'; slides 2, 3, and 4 are titled 'LIGO Gravitational Wave Signals' and contain diagrams of gravitational waves; slide 5 is blank with the text 'Student Name:'. The main editing area shows slide 1 with the text 'Student Name: John Doe'.

The screenshot shows the same Google Slides presentation editor, but with slide 2 selected. The slide is titled 'LIGO Gravitational Wave Signals' and contains the following content:

- Signals from distant events that distorted the spacetime fabric.
- **A new window to the Universe** opened up in addition to the good old electromagnetic window.

The slide features a large diagram of gravitational waves on the left and a smaller diagram of the LIGO detector on the right. The LIGO diagram includes labels for 'Laser Source', 'Power Recycling', 'Signal Recycling', 'Input Mirrors', 'End Mirrors', and 'Photodetector'. It also shows a graph of 'Strain' vs 'Frequency (Hz)' and a '350 MW Circulating Power' label. The source is cited as 'Abbott et al. (2016a)' and the website 'www.jihoonkim.org' is mentioned at the bottom right.



HW #4 to be posted soon!

(To be posted on jihoonkim.org, Due: **Jun. 1 (Mon), 23:00pm**,

Grader TA this time: 서선기, supercap@snu.ac.kr)

Term Project Paper

- Explore how ideas and methods from classical mechanics play a role in modern research or in everyday phenomena. Must approach the topic creatively and **incorporate your own original insights.**
- Due: Before the class starts on **Jun. 2nd**
(**10 page-limit** including cover/reference; typewritten report okay)

