

INSS2019

Group Exercises

August 5th- 16th, Fermilab

Exercises – What?

- Solve problems related to the topics we are discussing during the lectures
- Work in groups of 4-5 students to come up with a solution to an (often open ended) question
- Complete as many as you can during these two weeks.
Pick what interests you
- Discuss with the lecturers and other groups!
- Next week, we'll hear a presentation from each group presenting a solution on a problem of their choice.

Tutorials – Why?

- Reinforce what you are learning in the lectures
- Give you an opportunity to work with other students from different specialties and experiments
- Practice your skills in crafting concise presentations
- Lot's of fun!

Working group sessions

- This week -

Monday

August 5

6 pm – 6:30 pm

Rooms:

One West (WH1W)
Atrium (just outside)

Tuesday

August 6

3:30 pm – 6:00 pm

Rooms:

One West (WH1W)
Atrium (just outside)
Oscillatorium WH13NW

Wednesday

August 7

5:00 pm – 6:00 pm

Rooms:

One West (WH1W)
Atrium (just outside)
Small dining room WH1SE
Oscillatorium WH13NW

Thursday

August 8

3:30 pm – 6:00 pm

Rooms:

One West (WH1W)
Atrium (just outside)
Small dining room WH1SE
Oscillatorium WH13NW

Friday

August 9

4:00 pm – 6:00 pm

Rooms:

One West (WH1W)
Atrium (just outside)
Small dining room WH1SE
Oscillatorium WH13NW

Wilson Hall room code:

WH n DIR: n = floor, DIR = location

Example: WH12SW: 12th floor, South-West corner

Useful hints:

- Above the elevator is a sign that tells you if you are on the East or West side of the building
- The Wilson Hall 1st floor entrance is facing North
- "XO" stands for cross over and means the room is located between the elevators.

Working group sessions

- *Next week* -

Monday

August 12

3:30 pm – 6:00 pm

Rooms:

One West (WH1W)
Atrium (just outside)
Small dining room WH1SE
Oscillatorium WH13NW

Tuesday

August 13

3:30 pm – 6:00 pm

Rooms:

One West (WH1W)
Atrium (just outside)
Small dining room WH1SE
Oscillatorium WH13NW

Wednesday

August 14

Presentations!
11:30 am – 12:30 pm

Rooms:

One West (here)

Thursday

August 15

Presentations!
11:00 am – 12:30 pm

Rooms:

One West (here)

Presentations!
4:00 pm – 5:30 pm

Rooms:

One West (here)

Presentations

- One presentation per group
(you can choose one or multiple presenters – that's all up to you)
- Pick your favorite problem and present the solution you came up with.
- 8 minutes presentation time per group + 2 minutes for questions
 - We are a little squeezed for time, so your talk must be ≤ 8 minutes!
- Wednesday afternoon session: Groups 1 – 5
Thursday morning session: Groups 6 – 12
Thursday afternoon session: Groups 13 – 18
- Email your slides to inss2019@fnal.gov before the start of the session.
- There will be prizes!

How should your presentation look like?

- There is no “perfect” solution. A lot of problems are open ended. Be creative with your answers.
- Be creative with your presentation style, too!

Don't just tell us the answer is “42”.

Tell us how you arrived at your solution. Discuss various ideas if you came up with different approaches.

- But: you have to stay within 8 minutes!

Lecturers

- Discuss with the lecturers and co-participants!
- Not all lecturers can attend the two weeks. Feel free to reach out via email or ask some of the other lecturers to help you. That's what they are here for!
- Contact information on the right and on your problem sheet.

Intro. to the Physics of Massive Neutrinos & Phenom. of Atmos. and Accel. Neutrinos
Concha González-García (YITP-Stony Brook U. & ICREA-U.Barcelona) - maria.gonzalez-garcia@stonybrook.edu

Neutrino Detection

Mark Messier (Indiana University) - messier@indiana.edu

Long-Baseline Oscillation Experiments

Patricia Vahle (William and Mary) - plvahle@wm.edu

Solar and Reactor Neutrino Theory and Theories Beyond the SM and Neutrinos

Joachim Kopp (CERN & University of Mainz) - jkopp@cern.ch

Solar and Reactor Neutrino Experiments

Bryce Littlejohn (Illinois Institute of Technology) - blittlej@iit.edu

Statistical Methods in Neutrino Physics

Tom Junk (Fermilab) - trj@fnal.gov

Short-Baseline Expts. and Phenom

Georgia Karagiorgi (Columbia University) - georgia@nevis.columbia.edu

Origin and Nature of Neutrino Mass

Goran Senjanović (ICTP) - goran@ictp.it

Introduction to Leptogenesis

Jessica Turner (Fermilab) - jturner@fnal.gov

Direct Neutrino Mass Measurements and Neutrinoless Double-Beta Decay Experiments

Cheryl Patrick (University College London) - c.patrick@ucl.ac.uk

Neutrino Beams and Fluxes and Neutrino Cross Section Experiments

Kendall Mahn (Michigan State University) - mahn@msu.edu

Lepton-Nucleus Cross Section Theory

Noemi Rocco (Argonne National Laboratory & Fermilab) - nrocco@anl.gov

Particle Astrophysics with High-Energy Neutrinos

Francis Halzen (University of Wisconsin, Madison) - halzen@icecube.wisc.edu

Experimental Searches for Exotic Phenomena

Ornella Palamara (Fermilab) - palamara@fnal.gov

Neutrino Cosmology

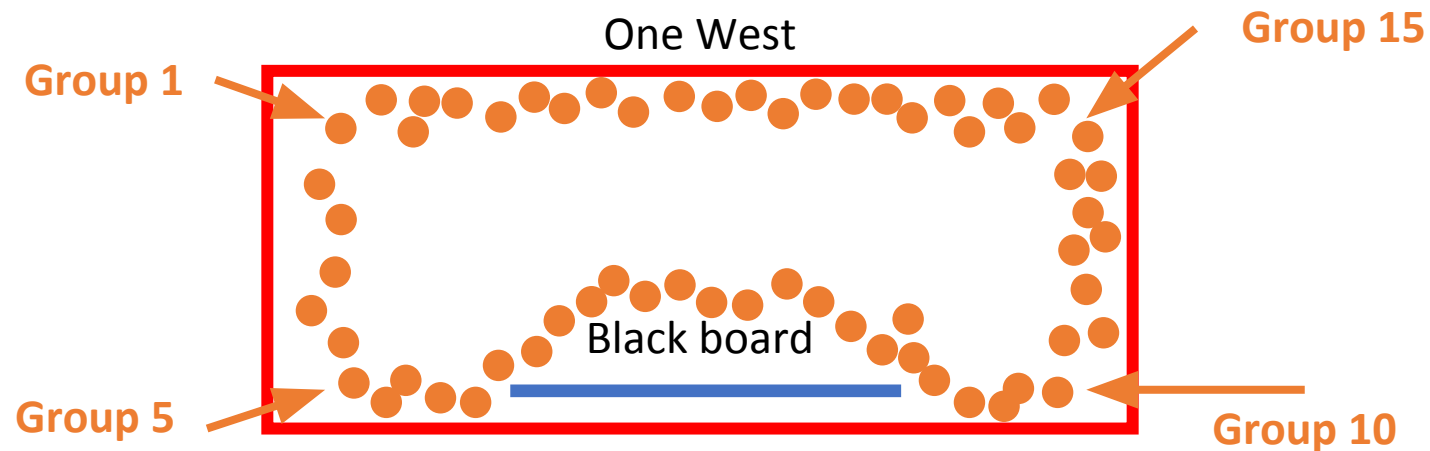
Yvonne Wong (UNSW) - yvonne.y.wong@unsw.edu.au

Groups

- The group size is 4-5 participants
- We have already done the group assignments . Check “Group Exercise Assignments” on the INSS2019 Indico page
- We hope everyone is meeting new people and making new friends
- We don't hope so, but if things really don't work out in your group, let us know.

Now

- Questions?
- Meet your group members and get to know each other



- We'll gather in the Atrium at 6:30 pm for the Welcome Reception