LIE GROUPS AND LIE ALGEBRAS, MATH 229A

RAPHAËL ROUQUIER

Fall 2019

MWF 9-9:50am, MS 6201

This course will give an introduction to the classical theory of Lie groups and Lie algebras.

Topics to be discussed:

- Topological groups
- Lie groups
- Lie algebras (nilpotent, solvable, semi-simple), enveloping algebras
- Correspondence between Lie groups and Lie algebras

References

J.Faraut, "Analysis on Lie Groups. An introduction", Cambridge University Press, 2008

J.-P.Serre, "Lie algebras and Lie groups", Lecture Notes in Mathematics 1500, Springer Verlag, 1992

V.S.Varadarajan, "Lie Groups, Lie Algebras and their Representations", Springer 1984

Office hours By appointment.

Grading

The course assessment will be based on a 20mn presentation of an assigned project. The presentations will be held during the period November 25 – December 6. A preferred choice, as well as a second and a third choice, will need to be sent to me by email by Monday October 28. An abstract of what you plan to do for the presentation will be due on Wednesday November 13. The list of projects will be provided on Wednesday October 23. You may also suggest your own topic, which I will need to approve.