

# LIE GROUPS AND LIE ALGEBRAS, MATH 229A

RAPHAËL ROUQUIER

*Fall 2017*

MWF 9-9:50am, MS 5148

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), enveloping algebras
- Formal groups
- 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** M 1pm-1:50pm, W 2:00pm-2:50pm or by appointment.

## Grading

The course assessment will be based on a 20mn presentation of an assigned project. The presentations will be held during the week December 4 - December 8. A preferred choice, as well as a second and a third choice, will need to be sent to me by email by Monday October 30. An abstract of what you plan to do for the presentation will be due on Wednesday November 15. The list of projects will be provided on Wednesday October 25. You may also suggest your own topic, which I will need to approve.