



# Fachbereich Mathematik & Statistik

Schwerpunkt Reelle Geometrie und Algebra

## Proseminar in Winter Semester 2016/2017

### Proseminar on Linear Algebra

Prof. Dr. Salma Kuhlmann, Dr. Maria Infusino and Lothar Sebastian Krapp

Thursday 11:45-13:15 (Room D406)

The aim of this cycle of seminars is to develop in more detail some topics that were introduced in the course "Lineare Algebra II" from the SoSe 2016. The talks could deal with operators on inner product spaces, applications of the spectral theorem, bilinear forms, and direct methods for linear systems and their applications. Further suggestions are welcome. Each talk will provide a review of the results from the literature about one of these topics and illustrate them with examples and applications. Every student should also produce a short handout about the material developed in her/his own talk.

#### Target group

This seminar is primarily aimed at third-semester Bachelor in Mathematics (Haupt- oder Nebenfach) students, but is also suitable for students of Lehramt and Bachelor of Education.

#### References

- G. Allaire, S. M. Kaber, Numerical linear algebra, Texts in Applied Mathematics, 55. Springer, New York, 2008.
- W. Ford, Numerical linear algebra with applications, Elsevier/Academic Press, Amsterdam, 2015.
- L. Fox, Introduction to numerical linear algebra, Monographs on Numerical Analysis Clarendon Press, Oxford, 1964.
- P. R. Halmos, Finite-dimensional vector spaces, Reprinting of the 1958 second edition. Undergraduate Texts in Mathematics. Springer-Verlag, New York-Heidelberg, 1974.
- K. Hoffman, R. Kunze, Linear Algebra, Prentice-Hall, Inc., Englewood Cliffs, N.J. 1971.
- F. Lorenz, Lineare algebra, vol. I and II, Spektrum Akademischer Verlag, 2008.
- L. Perko, Differential equations and dynamical systems, Texts in Applied Mathematics 7, 3rd ed., Springer, New York, 2001.
- M. Reed, B. Simon, Methods of modern mathematical physics, Academic Press, Inc., Harcourt Brace Jovanovich, Publishers, New York, 1980.

#### Preliminary meeting

A preliminary discussion for the assignment of the topics will take place on Thursday 14<sup>th</sup> of July from 11.45 to 13.15 in Room M630.

#### Language

The language of the seminar can be either German or English.

#### Contacts

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