Introduction

M.Sc. in Mathematical Modelling & Scientific Computing,
Practical Numerical Analysis

Michaelmas Term 2021

Introduction to Practical Numerical Analysis

- ▶ Two lectures per week in weeks 1–4, on Mondays at 2pm in L3 and on Thursdays at 9am in L4 (L5 in week 3).
- ▶ There will be one problem sheet per week to be submitted on Tuesdays by 12 noon.
- ▶ After week 1, the Monday lecture will go through concepts and the Thursday lecture will go through the problem sheets.
- ▶ Idea is to learn more Matlab by a set of examples from Numerical Analysis.
- ▶ Our TAs will be Fabian Laakman and Robert McDonald.
- ▶ Course materials, including lecture recordings, slides and problem sheets, will be available from https://courses.maths.ox.ac.uk/course/view.php?id=244.

Introduction to Practical Numerical Analysis

Topics we will look at are

- ▶ Rootfinding
- ▶ ODEs (initial value problems)
  - ▶ Simple Euler schemes
  - ▶ Runge Kutta schemes
  - ▶ Linear multistep methods
- ▶ Parabolic PDEs — the heat equation

Introduction to Practical Numerical Analysis

The idea of the Monday lectures (and Thursday in week 1) is to summarise the ideas for a topic. While there may be theorems stated, there will not be many proofs — this is meant to be a practical course.