# Preface

These lecture notes grew out of a Flemish set of notes for the course "Polar Spaces," taught in the Master's programme Mathematics at Ghent University, starting in the academic year 2010–2011 and presumably ending in 2023–2024. I took over that course from my mentor Jef Thas. However, Thas' course, named "Classical Polar Spaces" had two successions, one called "Galois Geometry," taught by my colleague Leo Storme, emphasising the classical geometric structures embedded in projective spaces, and the other called "Polar Spaces," which was intended to be the first course covering as many aspects of polar spaces as possible. For instance, it contains a complete and explicit description of the famous so-called "nonembeddable polar spaces," something that you do not even find in advanced textbooks on related subjects, such as books on buildings or point-line geometries. I looked for that description especially for that course, and later published the result together with my colleague Bart De Bruyn, also in a publication of Münster University, namely its mathematical journal.

I've already named three colleagues and at this point it seems right to express my gratitude towards them, if only for being interested in the same intriguing geometric objects as I am. Of course, Jef Thas taught me so much more, not only technical geometry, but also a way of thinking, arguing, doing research, in short, how a mathematician operates. I am indebted to him for shaping my career.

Closer to these lecture notes, I am grateful to the two co-lecturers with whom I had the pleasure to co-operate for a few years. First of all my graduate student Koen Struyve, who was co-teacher from 2013 until he left the university in 2016. He added a chapter on automorphism groups, which was not there before. Between 2019 and 2021 (the COVID-19 period …) my graduate student Anneleen De Schepper was co-teacher and she added the appendix.

A lot of students reported typos, inaccuracies, inquired more explanation, etc., in short, thanks to many students, these notes became much better than they were originally until they even became … publishable. Certainly after the smooth cooperation with Apostolos Damialis from the EMS Press who taught me a lot from an editorial point of view.

Finally, special thanks go to Sira Busch, a PhD student in Münster, who advertised my Flemish notes to Linus Kramer, who subsequently saw the possibility to include an English translation in this lecture notes series. The major difference from other publications where polar spaces are explained and results are surveyed and proved, is that here it concerns a whole book solely devoted to polar spaces, whereas in all other publications I am aware of, the publication is "only" a paper of limited length, or a book where polar spaces just form a chapter or a few chapters.