

EMS Series of Lectures in Mathematics

Edited by Andrew Ranicki (University of Edinburgh, U.K.)

EMS Series of Lectures in Mathematics is a book series aimed at students, professional mathematicians and scientists. It publishes polished notes arising from seminars or lecture series in all fields of pure and applied mathematics, including the reissue of classic texts of continuing interest. The individual volumes are intended to give a rapid and accessible introduction into their particular subject, guiding the audience to topics of current research and the more advanced and specialized literature.

Previously published in this series: Katrin Wehrheim, Uhlenbeck Compactness Torsten Ekedahl, One Semester of Elliptic Curves Sergey V. Matveev, Lectures on Algebraic Topology Joseph C. Várilly, An Introduction to Noncommutative Geometry Reto Müller, Differential Harnack Inequalities and the Ricci Flow Eustasio del Barrio, Paul Deheuvels and Sara van de Geer, Lectures on Empirical Processes Martin J. Mohlenkamp, María Cristina Pereyra, Wavelets, Their Friends, and What They Can Do for You Iskander A. Taimanov, Lectures on Differential Geometry Stanley E. Payne Joseph A. Thas

Finite Generalized Quadrangles

Second Edition



European Mathematical Society

Authors:

Stanley E. Payne Department of Mathematical and Statistical Sciences University of Colorado Denver Campus Box 170 PO Box 173364 Denver, CO 80217-3364, U.S.A.

E-mail: stanley.payne@ucdenver.edu

Joseph A. Thas Department of Pure Mathematics and Computer Algebra Ghent University Krijgslaan 281 – S22 9000 Ghent, Belgium

E-mail: jat@cage.ugent.be

First edition published in 1984 by Pitman, Boston, Research Notes in Mathematics 110

2000 Mathematical Subject Classification (primary; secondary): 05-02, 51-02; 05B05, 05B25, 51B10, 51B15, 51B20, 51E05, 51E12, 51E14, 51E20, 51E21, 51E30

Key words: Finite generalized quadrangle, finite projective space, generalized polygon, polar space, incidence geometry, circle geometry

ISBN 978-3-03719-066-1

The Swiss National Library lists this publication in The Swiss Book, the Swiss national bibliography, and the detailed bibliographic data are available on the Internet at http://www.helveticat.ch.

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in other ways, and storage in data banks. For any kind of use permission of the copyright owner must be obtained.

© 2009 European Mathematical Society

Contact address: European Mathematical Society Publishing House Seminar for Applied Mathematics ETH-Zentrum FLI C4 CH-8092 Zürich Switzerland Phone: +41 (0)44 632 34 36 Email: info@ems-ph.org Homepage: www.ems-ph.org

Typeset using the author's TeX files: I. Zimmermann, Freiburg Printed on acid-free paper produced from chlorine-free pulp. TCF ∞ Printed in Germany

987654321