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# PREFACE

This special issue contains twelve papers dedicated to the centenary of the birth of Ferenc Kárteszi (1907–1989). He was a distinguished geometer and did important work in classical, discrete, combinatorial and finite geometry. After the end of the fifties Kárteszi's main interest was finite geometry (and the didactics of mathematics). Feri bácsi, as he was called by his students and friends both in Hungary and Italy, was a passionate teacher and many of the authors featured in this special issue attended his famous lectures and seminars. Both guest editors wrote their doctoral dissertation with the guidance of Professor Kárteszi.

Kárteszi wrote a book *Bevezetés a véges geometriákba* (Introduction to finite geometries) which was translated into English, Italian and Russian. The content of this book illustrates Kárteszi's favourite topics in finite geometry and the papers of this special issue are mostly connected to these topics. One of the papers, written by the guest editors, is a survey on affinely regular polygons, which was at the centre of Professor Kárteszi's interest. The other survey paper is written by Kiss, who was also a student of Kárteszi and wrote his doctoral thesis with him.

Kárteszi initiated the investigation of cages (regular graphs of given girth with the minimum number of points). Two papers are devoted to this subject, written by Abreu, et. al. and Gács and Héger. Sperner spaces and Marshall Hall's free extension process are also dealt with in Kárteszi's book. The paper by Sonnino combines these two things. Arcs, ovals, caps and ovoids are in the core part of Kárteszi's book. The papers by Lisonek, Marcugini and Pambianco, and Beato, Faina and Giulietti are about arcs in projective planes or desarguesian nets. Selfdual configurations and polarities, as well as collineation groups also played a central role in Kárteszi's book and his seminars. The papers by Aguglia and Giuzzi, Cossidente, Ebert and Marino, and Cossidente and de Resmini are connected to these topics.

Purely combinatorial properties of geometric structures (such as finite analogues of Bolyai–Lobatschevsky planes) appear already in the first Chapter of Kárteszi's book. The paper by Napolitano in our special issue is connected to this topic. Kárteszi was very fond of the proofs where higher dimensional representations of planar objects were used. He had a beautiful

proof for the triangle case of Poncelet's theorem using Plücker coordinates. The paper by Mengyán is in this spirit.

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