

## English summaries

### **Claudi Alsina**

*Pere Pi Calleja, a great catalan mathematician from the 20th century*

This paper presents a complete biography of Pere Pi Calleja, one of the most important Catalan mathematicians of the XXth century. His contributions to mathematics and his influence in Spain and Argentina are investigated in detail. A complete bibliography of Pi Calleja's works is given.

**Keywords:** Pere Pi Calleja, mathematics in Catalonia, mathematics in Spain, mathematics in Argentina, Julio Rey Pastor, mathematical analysis.

**MSC2000 Subject Classification:** 01A55.

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### **Simeon Ball**

*Rédei polynomials: An introduction*

This paper describes some applications of polynomial methods to problems in finite geometry. We first introduce Rédei polynomials in connection with a problem of factorization in elementary abelian groups. We then show applications to blocking sets in finite projective planes obtained by Blokhuis. Finally we consider extensions to higher dimensions by Brouwer-Schrijver and Alon-Tarsi.

Keywords: Rédei polynomials, finite geometries, blocking sets.

MSC2000 Subject Classification: 05.

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### **Marta Casanellas**

#### *Algebraic methods in filogenetics*

In this paper we present some applications of algebraic geometry to phylogenetics. As many of the evolutionary models correspond to algebraic varieties, it is possible to use the ideal associated to these varieties for phylogenetic inference.

Keywords: phylogenetic invariant, evolutionary model, rational map.

MSC2000 Subject Classification: 14M25, 92D15, 92D20.

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### **Martin Klazar**

#### *Arithmetic progressions in primes*

Ben Green and Terence Tao announced in 2004 the proof of a fundamental result conjectured by Lagrange some 200 years ago: the primes contain arbitrarily long arithmetic progressions. This article provides some historical background in the investigations on the prime numbers and aims to describe in a plain way the main ideas behind this proof.

Keywords: primes, arithmetic progressions.

MSC2000 Subject Classification: 11.

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