

**“THE PRIME POWER CONJECTURE, QUADRATIC FORMS
AND THE FIELD WITH ONE ELEMENT.”**

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The prime power conjecture states that the order of a finite projective plane is a prime power. We will take the time to understand what is this conjecture about, we will review the proof of the only partial result available (a theorem of Bruck and Ryser dating back from 1949), and we will discuss a possible extension of the Bruck-Ryser method by considering the mythic “field with one element”.