

Tutor :

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<https://www.icmat.es/miembros/nfreitas/>

Method :

Online meetings.

Language :

English, Spanish or Portuguese

Project Title :

The Local-Global Principle

Summary :

The first Local-Global Principle, as formulated by Hasse in 1921, relates the behaviour of rational quadratic forms in \mathbb{Q} (a global field) to their behaviour in the p -adic fields \mathbb{Q}_p (local fields). Since then the idea of using local information towards understanding more difficult global properties has been generalized and applied to many problems making Local-Global methods a powerful tool in number theory. Even when the principle fails, we can sometimes salvage some connection between the local and the global. In this project the student will be introduced to the basic ideas of local-global principles, explore many examples, and study some classical results as the Hasse-Minkowski theorem for quadratic forms over \mathbb{Q} .