1139-20-339 **Albert Garreta*** (garreta.a@gmail.com). *The Diophantine problem of some solvable groups.*

The Diophantine problem in a group G, denoted $DP(G)$, consists in algorithmically determining if a given system of equations in G has a solution or not. In this talk we will talk about this and related problems in some families of solvable groups (including nilpotent and metabelian groups). The main result I will present states that, for these groups, $DP(G)$ always reduces to $DP(\mathcal{O})$, where $\mathcal{O}$ is the ring of integers of some global field. The latter is an open problem in number theory, and it is conjectured to be undecidable. We will also provide examples where $DP(G)$ actually reduces to $DP(\mathbb{Z})$, which is known to be undecidable due to Hilbert's 10th problem.

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