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John Labute* (labute@math.mcgill.ca), Department of Mathematics and Statistics, 805 Sherbrooke Street West, Montreal, Quebec H3A2K6, Canada. *Tame pro- p -groups*. Preliminary report.

Let p be a prime number, K a number field and S a finite set of primes of K of residual characteristic $\neq p$. The Galois group $G_S(p)$ of the maximal p -extension of K unramified outside S is a very mysterious object. By Golod-Shafarevich, this group is infinite if $|S|$ is large enough but, until recently, nothing was known in this case about its structure. These results lead to the study of certain class of abstractly defined pro- p -groups which appear strikingly often as groups $G_S(p)$. It is hoped that the study of these groups, which we call tame, will lead to a deeper understanding of the Galois groups $G_S(p)$. For example, it is not known whether tame pro- p -groups have infinite p -adic analytic quotients. A conjecture of Fontaine-Mazur implies that the groups $G_S(p)$ have no infinite p -adic analytic quotients. (Received January 03, 2007)