



LEZIONE LAGRANGIANA

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Some new elliptic integrals

22 novembre 2022 alle 16.30

in Aula Magna

ABSTRACT: In 1981 James Davenport surmised that if an algebraic function $f(x, t)$ is not integrable (with respect to x) by elementary means when t is an independent variable, then there are most finitely many complex numbers τ such that $f(x, \tau)$ is integrable by elementary means. In 2020 Umberto Zannier and I obtained a couple of counterexamples and in principle classified all of them with algebraic coefficients (they are somewhat rare). In this talk I will review our work and briefly sketch our recent practical description of all elliptic counterexamples (they are not unrelated to so-called Ribet curves).

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