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COLLOQUIO DE GIORGI

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"Newton, Leibnitz and transcendence"

Abstract

In LEMMA XXVIII of the Principia Newton gives a statement about the transcendence of an area function related to the movement of planets. The Lemma turned out to become a starting point of a long discussion about whether the proof was correct. Huygens gave as a counterexample the Bernoullian lemniscate. In this context Leibniz made a conjecture of values of rational integrals on curves taken between two algebraic points on the curve, as one would formulate it in modern terms.
We give a complete answer to this conjecture and it turns out that such an integral can be algebraic in some cases and is transcendental in other. Our work implies most of the classical transcendence results.

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ore 16.00
Sala degli Stemmi
Piazza dei Cavalieri, 7
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