



Berlin  
Mathematical  
School

## BMS Friday Colloquium

Friday 30 October 2015 at 14:15

Tea & Cookies starting at 13:00

BMS Loft, Urania, An der Urania 17, 10787 Berlin

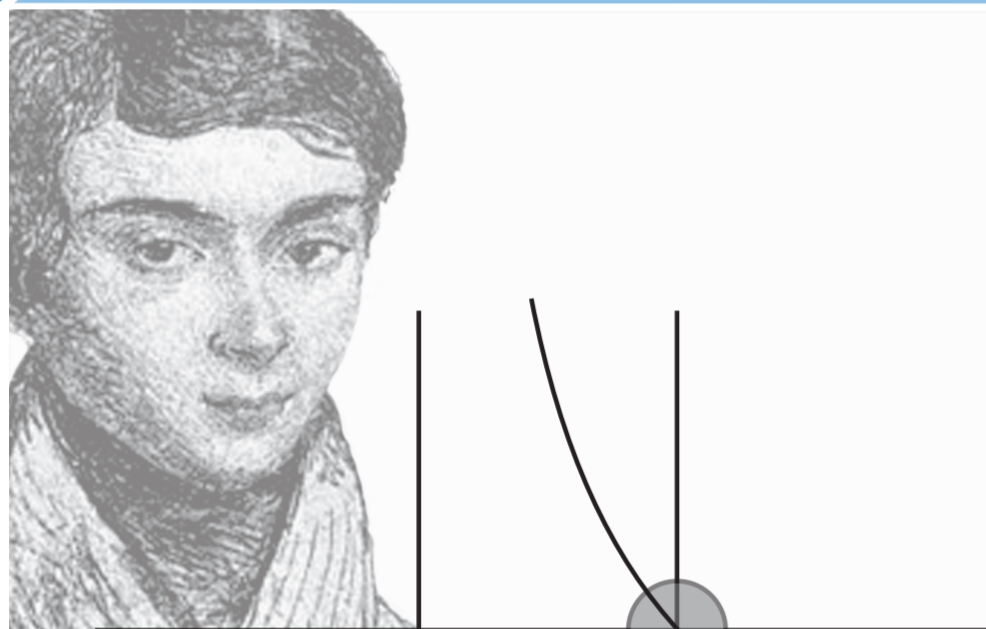
### Pierre Cartier

*(Université Paris-Diderot and IHÉS)*

#### Towards a Galois theory of transcendental numbers

Relying on the conjectural theory of motives by Grothendieck, Yves André suggested some years ago the possibility of a Galois-type theory for some transcendental numbers, the so-called “periods”. Francis Brown has recently given a non-conjectural version of a similar theory, the so-called “motivic periods”. In his talk, Cartier shall describe these two approaches, give explicit examples connected with the multi-zeta values and the use of motivic periods in mathematical physics (after F. Brown).

Pierre Cartier is a French mathematician whose interests include algebraic geometry, representation theory and mathematical physics. As a student in 1955, he became a member of the Bourbaki group, and since his PhD thesis on algebraic geometry from 1958, he has worked in various fields. Cartier is known for the introduction of the Cartier operator in algebraic geometry in characteristic  $p$ , and for work on duality of abelian varieties and on formal groups. He is the eponym of the Cartier divisor. In 1970, he was an invited speaker at the International Congress of Mathematicians in Nice. In 1979, he was awarded the Ampère Prize of the French Academy of Sciences and in 2012, he became a fellow of the American Mathematical Society.



$$\zeta(2) = \int_0^1 \int_0^1 \frac{dx dy}{1 - xy}$$