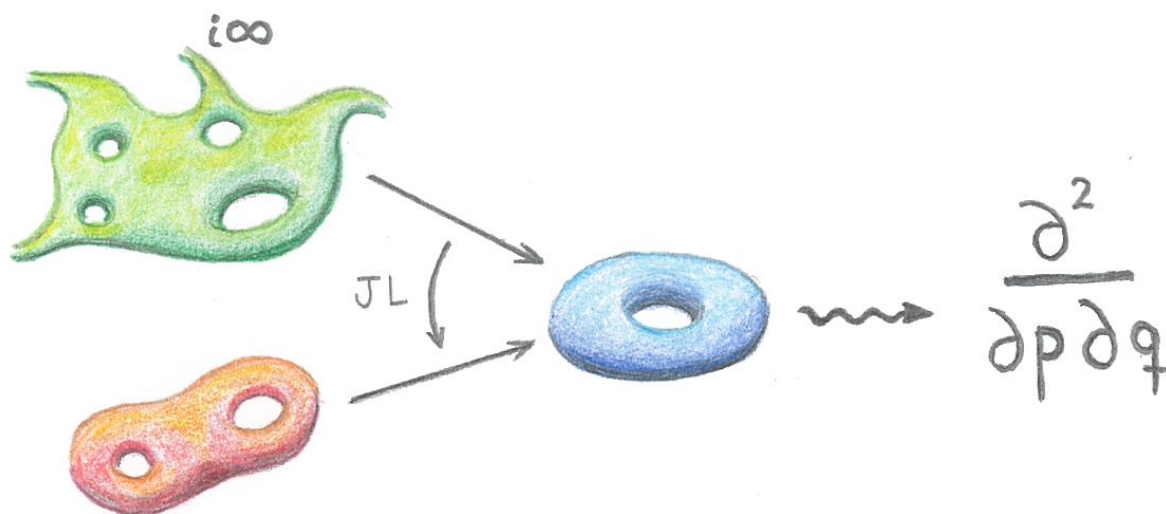


COLLOQUIUM

MATHEMATICS AND STATISTICS

QUEEN'S UNIVERSITY



IN QUEST OF ARITHMETIC DERIVATIVES

Abstract. There are well-known arithmetic analogies between integers and polynomials (or more generally, holomorphic functions), specially with respect to solutions of Diophantine equations. A crucial aspect that is missing in this analogy is that for polynomials and holomorphic functions one can use derivatives, while for integers there is no direct substitute of this operation. After some motivation, I will discuss a couple of possible candidates for arithmetic derivatives.

Hector Pasten (Harvard University)

Hector Pasten (Chile, 1988) is since 2014 a Benjamin Peirce Fellow at Harvard University. He was also a member of the Institute for Advanced Study at Princeton (2015-2016). Pasten received a Ph.D. in 2010 from Universidad de Concepcion in the subject of mathematical logic and non-archimedean analysis. Then he received a Ph.D. in 2014 from Queen's University in the subject of number theory. Among other distinctions, Pasten was awarded the Governor-General of Canada Academic Gold Medal (2014), the Doctoral Prize of the Canadian Mathematical Society (2015), and the Mathematical Council of the Americas Prize (2017). His current research is in number theory and related areas, addressing topics such as decidability of arithmetic structures, Diophantine approximation, and analogies between number theory and value distribution.

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