

PROGRAMME THÉMATIQUE
« POINTS RATIONNELS, COURBES RATIONNELLES ET COURBES ENTIÈRES SUR LES VARIÉTÉS ALGÈBRIQUES »
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THEMATIC PROGRAM
“RATIONAL POINTS, RATIONAL CURVES AND ENTIRE HOLOMORPHIC CURVES ON ALGEBRAIC VARIETIES”
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Open problems & speculation around the analogy between complex function theory and Diophantine approximation

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I will discuss two pieces of work from the 1990's that say something that could be potentially related to the analogy between complex function theory and Diophantine approximation, but for which mostly only one side of the analogy has been worked out. The first piece of work I will discuss is a result of Zagier about the heights of algebraic integers simultaneously close to zero and one, and will make a speculative connection to the classical Landau theorem in function theory. Second, I will recall the celebrated work of Caporaso, Harris, and Mazur which shows that Lang's conjectures on the arithmetic side of the analogy imply uniform bounds for the number of rational points on algebraic curves. I will then pose the question as to whether Lang's conjectures on the function theory side together with the purely algebro-geometric result of Caporaso, Harris, and Mazur lead to any uniformity results in function theory.

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