



## Noncommutative Geometry and Number Theory

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Deadline for manuscript  
submissions:

**closed (30 April 2020)**

### Message from the Guest Editor

There is a growing evidence that noncommutative geometry may have a lasting impact on the unsolved classical problems of number theory; see the work of Bost and Connes on the Riemann Hypothesis, Cuntz's generalization of the Bost–Connes systems, and Manin's real multiplication program. The goal of the Special Issue is to advance in this direction by collecting articles related to the following concrete problems: (i) the Manin's approach to Hilbert's twelfth problem ("Kronecker's Jugendtraum") about the explicit construction of generators of the abelian extensions of the real quadratic fields; (ii) a revision of the Weil's conjectures using the trace cohomology coming from the  $K$ -theory of operator algebras; (iii) and to recast and understand the Langlands conjectures in terms of the operator algebras. The methods are an interplay between the operator algebras (Serre  $C^*$ -algebras and non-commutative tori), algebraic geometry (abelian varieties and complex multiplication), and number theory (rational elliptic curves).





## Editor-in-Chief

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## Message from the Editor-in-Chief

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