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Bhargav Bhatt*, 2074 East Hall, 530 Church Street, Ann Arbor, MI 48105. *Perfectoid geometry and its applications.*

There is a strong and classical analogy, linking number theory and algebraic geometry, between the field of rational numbers and the field of rational functions in one variable. Perfectoid geometry animates this analogy by providing a context where one can treat a (fixed) prime number like a variable. The resulting notion has helped solve long-standing problems in diverse areas of mathematics—not just in number theory and algebraic geometry, but also commutative algebra and algebraic topology. In this talk, I will explain the definition of a perfectoid ring and discuss some applications. (Received September 16, 2018)