

Upstate New York Online Number Theory Colloquium

Time and Date: 12:00 pm EST November 23, 2020

Speaker: Alexandru Buium

Title: Solutions to arithmetic differential equations in the p -adic complex field

Abstract: Arithmetic differential equations are analogues of differential equations in which derivatives of functions are replaced by Fermat quotients of numbers. In its original form this theory would only allow the consideration of solutions to such equations in unramified extensions of the p -adic integers. Recently, L. Miller and the author showed that the ‘main examples’ of arithmetic differential equations in the theory possess a remarkable differential overconvergence property. This allows the consideration (and study) of their solutions in the ring of integers of the p -adic complex field.