



In the framework of the activities of the PhD programme in Mathematical Sciences

**Fabrizio Andreatta**  
University of Milan

will offer a PhD course on

## **Periods and period domains**

### **Abstract**

Periods are fundamental invariants of algebraic varieties that arise by comparing different cohomology theories. Over the complex numbers, for example, they arise by comparing Betti and de Rham cohomology and are described explicitly by integrating forms along cycles.

This course will focus on moduli spaces of periods in several contexts.

Topics that I will address, depending on the interests and background of the audience, are:

- 1) Classical complex analytic setting: Variations of Hodge structures, their moduli, Shimura varieties;
- 2) P-adic setting: perfectoids and p-adic periods after Gross-Hopkins and Scholze;
- 3) Positive characteristic setting: stratifications of period spaces in mixed characteristics;

### **Scheduling**

The course will be held via Zoom platform  
**from January 12 to February 16, 2021**

from **15.00 to 17.00** with the following scheduling:

**12, 15, 19, 22, 26, 29** January  
**5, 9, 12, 16** February

The Zoom link will be provided directly by Prof. V. Mastropietro