

The **Vienna School of Mathematics (VSM)** is a joint graduate school of the mathematics faculties of the **University of Vienna** and the **TU Wien**. The VSM is devoted to top-level PhD education in all branches of mathematics. It fosters intra- and interdisciplinary scientific cooperation and networking among students and advisors and aims at increasing the international visibility of the Vienna area as a center for mathematics.

The VSM currently announces a PhD position in the area of

Functional analysis of infinite bounded operators (University of Vienna, Supervisor: P. Giordano)

The thesis topic will be developed inside the FWF project “Functional analysis of infinite bounded operators” (PI Paolo Giordano, co-PI: Michael Kunzinger and Hans Vernaevae). Using methods of non-Archimedean analysis, the main aim is to develop functional analysis of unbounded operators, viewed as ordinary continuous operators but with an infinite Lipschitz constant. The framework is that of Colombeau theory and nonlinear analysis of generalized functions. Applications to quantum mechanics and the use of basic categorical methods are foreseen. See <https://www.mat.univie.ac.at/~giordap7/> for a detailed description of the project.

A good background in functional analysis is a basic requirement for the position. Prior experience with the study of Colombeau generalized functions is an advantage but not strictly required. Similarly, background on non-Archimedean rings and analysis, will be advantageous but not strictly required.

The advertised position is associated with the Faculty of Mathematics of the **University of Vienna** in the Differential Algebras and Nonlinear Analysis (DIANA) research group of Prof. Dr. Michael Kunzinger, and in collaboration with Prof. Dr. H. Vernaevae of the Department of Pure Mathematics of the University of Ghent. The successful candidate will become a member of the Vienna School of Mathematics and is expected to actively contribute to its activities. The extent of employment is 30 hours per week. The position will start as soon as possible, after the selection of the candidate will be finished, and is supported for 2 years and 10 months. The remaining time of this position will be supported by future projects.

Application Requirements and Procedure

The candidates must have a master degree (or equivalent) in Mathematics at the moment the PhD position starts. The application documents should contain a letter of motivation; the scientific CV with publications list; higher education certificates/diplomas; and letter(s) of recommendation. Applications have to be sent to office@vsmath.at. The deadline for applications is **November 6, 2020**. Before the final decision, selected candidates will have an online interview with P. Giordano based on the understanding of a given article and the development of a simple research problem.