The Azat Miftakhov Day

Webinar organized by the Azat Miftakhov committee

Wednesday June 16, 2021 starting at 4pm Central European Summer Time (UTC+2)

PETER SCHOLZE

Universität Bonn, Germany

Condensed Mathematics

(Joint with Dustin Clausen) It is a well-known problem that topological spaces have no good categorical properties – for example, topological abelian groups do not form an abelian category, and in a complex of topological vector spaces, differentials may not have closed image, leading to pathological cohomology groups. However, we realized that one can replace topological spaces by the closely related notion of condensed sets, resolving all of these foundational problems. This makes it possible to develop new foundations for both nonarchimedean and archimedean functional analysis, even allowing a very general formalism of analytic spaces – encompassing complex manifolds, real manifolds of all flavours, schemes, formal schemes, rigid-analytic varieties, and adic spaces into one unified framework. We will try to give an overview of these ideas.