Invitation

Logic Colloquium

Philip Welch
(University of Bristol)

Quasi-induction

the talk will take place
on **Monday, 15.11.2021** at **15:15** in room **H309**.

All interested are welcome to attend

Abstract: Induction, whether appearing in the role of a proof by induction ("if 1 has property P, and (n has property P implies that $n+1$ has property P, therefore all n have property P") or as inductive definitions (e.g., that of the set of well formed formulae in a formal language) is a principle tool in mathematics. Whilst many inductive definitions involve only a passage through finite stages, and are often presented as definitions by recursion, many also involve transfinitely many stages before completion. (We give an example involving "infinite chess".) The theory of such inductive definitions over general structures was magisterially laid down by Moschovakis in the 1970's (in "Elementary Induction on Abstract Structures").
We consider here a broader class of "quasi-inductive" processes that alter the rules of induction at limit stages of their production to a "liminf" rule rather than simple "union". We give some examples that have arisen in the philosophical theory of truth, from computer science, and from set theory. Such q.i.-processes extend inductive ones and also result in a rich theory to which pleasingly many of the results from the Moschovakian theory can be extended.

Carolin Antos, Salma Kuhlmann
Coordinators of the Logic Colloquium