MME Seminar 2018

Session 2

Date: Tues 18th Sep 2018
Time: 10.30 am to 11.30 am
Venue: MME Journal Rm (NIE7-3-16)

The complexity of the epistemological genesis of mathematical proof

By Nicolas Balacheff

Early learning of mathematics is first rooted in pragmatic evidences or learners' confidence in the facts and procedures taught. Nonetheless, learners develop a true knowledge which works as a tool in significant problem situations, and which is accessible to falsification and argumentation. As teachers know, they could validate what they claim to be true, but based on means in general not conforming to mathematical standards. Teaching these standards requires an evolution of their understanding of what can count as a proof in the mathematical classroom, as well as an evolution of their mathematical knowing.
In this seminar, Nicolas will discuss this claim from the perspective of modelling the learners ways of knowing (the model cK¢), within the framework of the theory of didactical situations, bridging the semiotic system they use, the type of actions they perform and the controls they implement either to construct or to validate the solutions they propose to a problem.

Nicolas Balacheff is senior scientist emeritus at the French National Centre for Scientific Research (CNRS). His scientific career started in the early seventies with a focus on the learning and teaching of mathematical proof. At the end of the eighties he engaged in research on learner modelling with the aim to bridge research in mathematics education and in educational technology. Nicolas was the co-founder in 1980 of the journal Recherches en Didactique des Mathématiques. He served as President of the International group for the Psychology of Mathematics Education (1988-1990). In the recent years, he served as director of the computer-science and discrete mathematics Laboratory Leibniz (2000-2006). He was the founder and first scientific director of Kaleidoscope, European network of excellence on Technology Enhanced Learning (2004-2007).

All are welcome!