Conference «The Mathematical Legacy of Jean-Louis Loday»

Presentation

Jean-Louis Loday, directeur de recherche CNRS at IRMA, suddenly passed away on June, 6th, 2012. This conference, in his memory, aims to give a picture of the mathematical research that he passed down to the mathematical community, notably the study of the interplay between algebraic K-theory and cyclic homology, and applications of the theory of algebraic operads. These themes constitute the thread of the program of this conference.

Jean-Louis's work has profoundly marked the fields of algebra and topology. His most celebrated theorem, obtained in a joint work with D. Quillen in 1983, asserts that "*The homology of the Lie algebra of matrices gl(A) with coefficient in a ring A is equal to the symmetric algebra spanned by the cyclic homology of A*". This result followed from his research on algebraic K-theory and opened the way for a program of studying the analogy between K-theory and cyclic homology that Jean-Louis would elaborate in the next period, by using the theory of operads.

This research led Jean-Louis to discover new categories of algebras, the most well-known being the Leibniz and dendriform algebras, which then had applications in other branches of mathematics and physics.

In the 2000's, he took on a classification of the types of bialgebras satisfying good structure theorems. In the meanwhile, he wrote with Bruno Vallette a benchmark book on algebraic operad theory. Lately he set about a proposal of generalizing Drinfeld associators to certain combinatorial operads, and he committed himself to a program of refounding the interaction between algebra and computer science, via an operadic interpretation of rewritting.

Jean-Louis Loday has worked a lot for the community during his career. He has been director of IRMA from 1991 to 1995 and a representative of the Ministry of research from 1995 to 1998. He has initiated or took part of the organization of numerous international research proposals, and has also contributed to the international reputation of IRMA by hosting postdocs and invited researchers. He has supervised fifteen Ph.Ds. He brought an utmost contribution to the rebirth of operads in the middle of the 1990's and has created, ex-nihilo, a French research group of international renown in this domain. Significantly, one of the first meetings in this area after this rebirth was organized by Jean-Louis Loday and Jim Stasheff at the CIRM of Luminy in France in 1995.

Program

The conference aims to gather contributors of the branches of mathematics which Jean-Louis Loday tackled during his careers, from algebraic K-theory, which was the subject of his thesis, to the theory of operads, to which he devoted most of his energy in the last few years.

Wednesday afternoon will be devoted to a survey, intended for a wide audience, of Jean-Louis's career and his main contributions in mathematics.

The theory of operads is the subject of an ANR research grant "Algebraic Homotopy, Operads and Grothendieck-Teichmüller groups (HOGT)" in which Jean-Louis got significantly involved just before passing away. This conference will also serve, among other tributes included in the event, as a special session, of the ANR HOGT annual seminar, dedicated to Jean-Louis.

Invited speakers:

Pierre Cartier (IHES)
Alain Connes (Collège de France)
Pierre-Louis Curien (Université Paris 7)
Vladimir Dotsenko (Trinity College Dublin)
Alice Fialowski (Eötvös Loránd University)
Herbert Gangl (Durham University)
Grégory Ginot (Université Paris 6)
Lars Hesselholt (Nagoya University)
Mikhail Kapranov (Yale University)
Teimuraz Pirashvili (Leicester University)
Maria Ronco (Talca University)
Christophe Soulé (IHES)
Jean-Yves Thibon (Université Paris Est)
Boris Tsygan (Northwestern University)
Bruno Vallette (Université de Nice)