Curriculum Vitae

Romain Tessera

Personal informations

- Professional address: ENS de Lyon; 46, allée d'Italie 69364, Lyon Cedex 07 (France).

- Email address: romtessera@gmail.com

Job appointments

- Permanent pure research position in CNRS (chargé de recherche). École Normale Supérieure de Lyon.

- Between 2006 and 2009: Postdoc in Vanderbilt's University.

- Between 2003 and 2006: PhD thesis in Université de Cergy Pontoise, adviser: Thierry Coulhon, and University of Neuchatel, adviser: Alain Valette.

Grants and awards

- 2007–2009: NSF-grant 0706486.

- 2009–2011: collective grant: ANR (Allocation Nationale de Recherche, french equivalent of NSF) "AGORA".

- 2010–2014: collective grant: ANR "BLANC".

- Samir Aldroubi and Amira Azhari prize 2010 (Prize for Excellence in Postdoctoral Research, awarded by the Mathematics Department of Vanderbilt University).

List of (pre-)publications

The list of my (pre-)publications is available on my webpage:
http://www.normalesup.org/ tessera/

- **Embedding metric spaces into Banach spaces**

  - (2010) (with Tim Austin et Assaf Naor) Sharp quantitative nonembeddability of the Heisenberg group into superreflexive Banach spaces. Submitted.
  - (2007) On the L^p-distorsion of finite quotients of amenable groups. To appear in Positivity.
  - (2006) Quantitative property A, Poincaré inequalities, Lp-compression and Lp-distortion for metric measure spaces. Geom. Dedicata 136 (2008), 203–220.
  - (2006) Asymptotic isoperimetry on groups and uniform embeddings into Banach spaces. To appear in Comment. Math. Helv.

- **Distortion and Dehn function in groups**

  - (2010) (with Yves de Cornulier) Embedding of Baumslag-Solitar groups into Discrete groups with quadratic Dehn function. Submitted.
  - (2006)(with Yves Cornulier) Quasi-isometrically embedded free subsemigroups. Geom. Topol. 12 (2008), 461-473.

- **Geometry and analysis on groups and metric measure spaces**

  - (2007) Large-scale isoperimetry on locally compact groups and applications. Actes du Séminaire de Théorie Spectrale et Géométrie. Vol. 25. Année 2006–2007, 179–188, Sémin. Théor. Spectr. Géom., 25, Univ. Grenoble I, Saint-Martin-d'Hères, 2008.
  - (2007) Isoperimetric profile of subgroups and probability of return of random walks on elementary solvable groups. Preprint.
  - (2006) Large scale Sobolev inequalities on metric measure spaces and applications. Rev. Mat. Iberoam. 24 (2008), no. 3, 825–864.
  - (2005) Asymptotic isoperimetry of balls in metric measured spaces. Publicaciones Mathematiques 50, 2, 315-348.
  - (2005) Volume of spheres in metric measured spaces and in groups of polynomial growth. Bull. Soc. Math. France 135 (2007), no. 1, 47–64.

- **Isometric actions of groups on a Hilbert space**

  - (2010)(avec Raf Cluckers, Yves de Cornulier, Nicolas Louvet, Alain Valette) The Howe-Moore property for real and p-adic groups. To appear in Math. Scand.

  - (2009) (with Yves Cornulier) A characterization of relative Kazhdan Property T for abelian groups. Preprint.

  - (2007) Coarse embeddings into a Hilbert space, Haagerup Property and Poincare inequalities. Journal of Topology and Analysis Vol. 1 (2009), 87–100.

  - (2006)(with Yves Cornulier and Alain Valette) Isometric group actions on Hilbert spaces: growth of cocycles. Geom. Funct. Anal. 17 (2007), 770-792.

  - (2006)(with Yves Cornulier and Alain Valette) Isometric group actions on Hilbert spaces: structure of orbits. Canad. J. Math. 60 (2008), no. 5, 1001–1009.

  - (2006)(with Yves Cornulier and Alain Valette) Isometric group actions on Banach spaces and representations vanishing at infinity. Transform. Groups 13 (2008), no. 1, 125–147.

- **L^p-cohomology of homogeneous manifolds**

  - (2009) (with Yves Cornulier) Contracting automorphisms and Lp-cohomology in degree one. Preprint.

  - (2006) Vanishing of the first reduced cohomology with values in a Lp-representation. Annales de l'institut Fourier, 59 no. 2 (2009), p. 851-876.

- **Rigidity of topological manifold**

  - (2010) (with Erik Guentner and Guoliang Yu) A notion of geometric complexity and its applications to topological rigidity. Submitted.

- **On the coarse Novikov conjecture**

  - (2009) (with Erik Guentner and Guoliang Yu) Operator Norm Localization for linear groups and applications to K-theory. To appear in Advances in Math.

- (2007) (with Xiaoman Chen, Xianjin Wang, Guoliang Yu) Metric sparsification and operator norm localization. Advances in Math. 218 (2008), 1496-1511.

- **Left-inverses for infinite matrices**

  - (2009) Left-inverses for matrices in the weighted Schur algebra. To appear in J. Funct. Anal.

International conferences and workshops

Invited speaker

- **Actions and Invariants of Residually Finite Groups: Asymptotic Methods**, Math Institute, Oberwolfach. September 2010.

- **Summer School: Around the Baum-Connes Conjecture**, Bloomington, Indiana, August 2010.

- **Between groups and foliations**, Bilbao, May 2010.

- **Workshop on von Neumann algebras and group actions**, University of Copenhagen , February 2010.

- **Workshop in Analysis and Probability**, TAMU, Texas. August 2009.

- **Affine Isometric Actions of Discrete Groups**, Ascona, Switzerland, June 2009.

- **Théorie de l'échantillonnage et applications (SAMPTA'09)**, CIRM, Luminy, France, May 2009.

- **Workshop on Groups, Embeddings and Applications**, University of Hawaii, Honolulu. March 2009.

- **Von Neumann Algebras and Ergodic Theory of Group Actions**, Math Institute, Oberwolfach. October 2008.

- **The Sixth Annual NCGOA Spring Institute**, Vanderbilt University, May 2008.

- **Topics in Geometric Group Theory**, Mathematical Sciences Research Institute, Berkeley. November 2007.

- **Geometry and Algorithms**, Université de Heriot-Watt, Edinburgh. April 2007.

- **Geometric linearization of graphs and groups**, Lausanne. January 2007.

- **The Fourth East Coast Operator Algebras Symposium**, Georgia Institute of Technology, Atlanta, October 2006.

- **The property of rapid decay**, Université de Palo Alto, Californie (USA). January 2006.

- **Heat Kernels, Stochastic Processes and Functional Inequalities**, Institut de Mathématiques, Oberwolfach. December 2005.

- **Asymptotic and Probabilistic Methods in Group Theory**, Geneva, June 2005.

As organizer

Workshop on Analysis on Groups, March 2008 in Puerto Rico.

Mini-courses

- **Université de Fudan, Shanghai. August 2007. Series of 10 lectures on random walks on groups and amenability (course for graduate students).** Université de Fudan, Shanghai. August 2007.

- **Series of 3 lectures during the semester "Limits of graphs in group theory and computer science".** Bernoulli Center, Lausanne. June 2007.