

CURRICULUM VITAE OF BAPTISTE DEVYVER

PERSONAL INFORMATIONS

Nationality: French

Address: Department of Mathematics
Technion - Israel Institute of Technology
Haifa, ISRAEL

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EDUCATION

2015-present **Assistant Professor** at the Technion (Haifa, Israel)
2014-2015 **Post-doc** at the University of British Columbia (Vancouver, Canada)
2011-2014 **Post-doc** at the Technion – Israel Institute of Technology (Haifa, Israel)
2008-2011 **PhD** at the University of Nantes (France)
Advisor: Gilles Carron
Title of dissertation : “Schrödinger operators and Riesz transform on complete non-compact manifolds”.

PUBLICATIONS

1. *On the finiteness of the Morse index for Schrödinger operators*, Manuscripta Math. **139** (1-2), 2012, pp. 249-271.
2. with M. Fraas and Y. Pinchover, *Optimal Hardy-type inequalities for elliptic operators*, C. R. Acad. Sc. Paris **350** (2012), 475–479.
3. *A Gaussian estimate for the heat kernel on differential forms and application to the Riesz transform*, Math. Ann. **358** (2014), no. 1-2, 25–68.
4. with M. Fraas and Y. Pinchover, *Optimal hardy weight for second-order elliptic operator: an answer to a problem of Agmon*, J. Funct. Anal. **266** (2014), 4422–4489.
5. *Hardy inequalities and spectrum*, J. Math. Pures Appl. (9) **102** (2014), no. 5, 813–853.
6. *A perturbation result for the Riesz transform*, Ann. Sc. Norm. Super. Pisa Cl. Sci. (5) Vol. XIV (2015), 937–964.

7. with Y. Pinchover, *Optimal L^p Hardy inequalities*, Ann. Inst. H. Poincaré Anal. Non Linéaire **33** (2016), no. 1, 93–118.
8. with Y. Pinchover and G. Psaradakis, *Optimal Hardy inequalities in cones*, Proc. Royal Soc. Edinburgh A **147** (2017), no. 1, 89–124.
9. *Hardy spaces and heat kernel regularity*, to appear at Potential Anal., (2017) , 37 p.
10. *Heat kernel and Riesz transform of Schrödinger operators*, to appear at Ann. Inst. Fourier (Grenoble), 46 p.
11. *Index of the critical catenoid*, accepted at Geom. Dedicata, 21 p.

Submitted

12. with T. Coulhon and A. Sikora, *Gaussian heat kernel estimates: from functions to forms*, arXiv:1606.02423, *submitted*, 49 p.

In preparation

13. *Gradient estimates of the heat kernel*
14. *An eigenvalue problem for free boundary minimal surfaces in the ball*
15. with E. Russ, *Hardy spaces on manifolds with quadratic curvature decay*

INVITATIONS AND TALKS

Invitations abroad

- One week, University of Grenoble, France, April 2017.
- Two weeks, University of British Columbia, Vancouver (Canada), July 2016.
- One week, Université de Montpellier, France, February 2016.
- One month, ANU, Canberra, February 2014.
- One week, Università del’Insubria, Como (Italy), April 2014.

Talks in conferences

- Final meeting of the ANR “Géométrie des variétés d’Einstein non-compactes ou singulières”, Montpellier (France), March 2010: “Heat kernel estimates and Riesz transform on non-compact manifolds”.
- Workshop “Geometric Analysis II” (Grenoble, France), September 2011, “Finiteness of the Morse index for a Schrödinger operator”.
- FIRST Workshop (Mount Zion Hotel, Jerusalem), September 2012, “Optimal Hardy inequalities”.
- New trends in harmonic analysis at the ICMAT (Madrid), May 2013, “Boundedness of the Riesz transform on manifolds”.
- Mini-symposium “Functional Inequalities” at the International Conference of Applied Mathematics (Heraklion, Crete), September 2013, “Optimal Hardy-type inequalities”.
- Geometric analysis on Riemannian and singular metric measure spaces, Como (Italy), July 2016, “Gaussian heat kernel estimates: from functions to forms”.
- Contemporary aspects of analysis, Cyprus, May 2017, “Gaussian heat kernel estimates: from functions to forms”.
- Geometric Analysis in Roscoff, France, October 2017, “Index of free boundary minimal surfaces in \mathbb{B}^3 ”.
- Conference in honor of M. Marcus 80th birthday, January 2017, “Gradient estimates for the heat kernel”

OTHER SCIENTIFIC ACTIVITIES

- (2017) Mentoring a project, “Index of the critical Mobius band” with 3 undergrad students
- (2016, 2017) Co-organizer of the “Summer projects in Math. at the Technion”.
- (2015-2016) Organizer of the “PDE and Applied Math. seminar”, Technion.
- (2015) “Summer projects in Math. at the Technion”: one week projects to introduce undergraduate students to research in math. Responsible for the project: minimal surfaces with finite total curvature.
- (2015) Participation to an event “Math and Games” for young children in Vancouver.