

Department of Mathematics
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Positions

- May 2019 – Present: *Assistant Professor*, Indian Institute of Technology Bombay, Mumbai, India.
- September 2018 – April 2019: *Postdoctoral Fellow*, McGill University, Montréal, Canada.
Supervisors: Pengfei Guan, Niky Kamran and Jérôme Vétois.
- September 2016 – August 2018: *Postdoctoral Fellow*, University of British Columbia, Vancouver, Canada.
Supervisor: Nassif Ghoussoub.
- October 2015 – August 2016 : *ATER-Doctorat*, Université de Lorraine, Nancy, France.
- November 2016 – September 2015: *Doctorant*, Institut Élie Cartan de Lorraine, Université de Lorraine, Nancy, France.
Funding: Fédération Charles Hermite and Région Lorraine.

Education

- 2016: *Ph.D in Mathematics*, Université de Lorraine, Institut Élie Cartan de Lorraine, Nancy, France.
Advisors: Frédéric Robert and Dong Ye.

Thesis Title: Polyharmonic Equations on Manifolds and Asymptotic Analysis of Hardy-Sobolev Equations with Vanishing Singularity.
Defended: June 2016.

Ph.D. committee: Emmanuel Hebey (Université de Cergy-Pontoise), Patrizia Pucci (Università degli Studi di Perugia), Tobias Weth (Goethe-Universität Frankfurt), Yuxin Ge (Université Paul Sabatier, Toulouse), David Dos Santos Ferreira (Université de Lorraine), Frédéric Robert (Université de Lorraine) and Dong Ye (Université de Lorraine).
- 2012: *M.Sc and M.Phil in Mathematics*, Tata Institute Of Fundamental Research-CAM, Bangalore, India.
Advisor: K Sandeep.

Thesis Title: On A Variational Problem with Lack of Compactness: The Effect of the Topology of the Domain .
Defended: September, 2012.
- 2009: *B.Sc (Hons) in Mathematics*, University of Calcutta, Kolkata, India.

Research Interests

Geometric analysis and Nonlinear partial differential equations : Blow-up analysis and Concentration phenomenon in Elliptic PDEs, Prescribing curvature problems, Higher-order conformally invariant PDEs.

Publications

- (5) Multiplicity and stability of the Pohozaev obstruction for Hardy-Schrödinger equations with boundary singularity, with N. Ghoussoub and F. Robert. – to appear in *Memoirs of the AMS*.
- (4) Mass and Extremals Associated with the Hardy-Schroödinger Operator on Hyperbolic Space, with H. Chan, N. Ghoussoub, S. Shakerian, L. Faria. *Adv. Nonlinear Stud.* **18** (2018), no. 4, 671–689.
- (3) Hardy-Sobolev equations with asymptotically vanishing singularity: Blow-up analysis for the minimal energy. *Nonlinear Anal.* **169** (2018), 190–217.
- (2) Struwe’s Decomposition for a Polyharmonic Operator on a Compact Riemannian Manifold with or without boundary. *Commun. Pure Appl. Anal.* **16** (2017), no. 1, 311–330.
- (1) GJMS-type Operators on a compact Riemannian manifold: Best constants and Coron-type solutions. *J. Differential Equations* **261** (2016), no. 9, 4997–5034.

Preprints

- Existence result for the higher-order Q -curvature equation, with J. Vétois (2020).
- The Hardy–Schrödinger Operator on the Poincaré Ball: Compactness and Multiplicity, with N. Ghoussoub and F. Robert (2020).

Invited Talks

- 07/2019 : Colloquium, Indian Institute of Technology Bombay, Mumbai, India.
- 03/2019 : Geometric Analysis seminar, McGill University, Montréal, Canada.
- 10/2018 : Geometric Analysis seminar, McGill University, Montréal, Canada.
- 07/2018 : Special session ”Geometric and Nonlinear PDEs”, The 12th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Taipei, Taiwan.
- 06/2018 : Scientific session “Partial Differential Equations and Variational Problems”, 2018 Summer meeting of Canadian Mathematical Society, University of New Brunswick, Fredericton, New Brunswick, Canada.
- 12/2017 : Department of Mathematics, Indian Institute of Technology Bombay, Mumbai, India.
- 12/2017 : Analysis seminar, Indian Institute of Science Education and Research, Pune, India.
- 12/2017 : Colloquium, Tata Institute Of Fundamental Research-CAM, Bangalore, India.
- 11/2017 : Geometric Analysis seminar, McGill University, Montréal, Canada.
- 10/2016: Differential Geometry-Mathematical Physics-PDE seminar, University of British Columbia.
- 08/2016: DMS seminar, Indian Institute of Science Education and Research, Kolkata, India.
- 08/2016: Stat-Math Unit seminar, Indian Statistical Institute, Kolkata, India.
- 07/2016: Weekly seminar, Università degli Studi di Perugia, Italy.

- 06/2016 : Séminaire EDP, Analyse et Applications, Institut Élie Cartan, Metz, France.
- 06/2016 : Geometric Analysis seminar, Goethe-Universität Frankfurt, Germany.
- 04/2016 : Geometric Analysis seminar, McGill University, Montréal, Canada.

Short Visits

- 04/2016 : The Department of Mathematics and Statistics, McGill University, Montréal, Canada.
- 06/2016 : Institut für Mathematik, Goethe-Universität Frankfurt, Germany.
- 07/2016: Università degli Studi di Perugia, Italy.
- 11/2017 : The Department of Mathematics and Statistics, McGill University, Montréal, Canada.
- 02/2018 : La Sapienza Università di Roma, Rome, Italy.

Teaching Experience

- *Indian Institute of Technology Bombay*

2020-2021 Autumn semester	MA 817: Partial Differential Equations I
2019-2020 Spring semester	SI 416: Optimization
2019-2020 Autumn semester	SI 507: Numerical Analysis

- *McGill University*

Fall 2018	MATH 262: Intermediate Calculus
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- *University of British Columbia*

2017/2018 Summer Term 1	MATH 257/316: Partial Differential Equations / Elementary Differential Equations II
2017/2018 Winter Term 2	MATH 101: Integral Calculus with Applications to Physical Sciences and Engineering
2016/2017 Summer Term 2	MATH 317: Vector Calculus
2016/2017 Winter Term 2	MATH 103: Integral Calculus with application to Life Sciences

- *Université de Lorraine*

2015/2016	Mathematics for Engineers, Computer Sciences, Physics.
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- Others

12/2019–AIS on Geometric Analysis, Indian Institute of Technology Bombay	Series of four lectures on Critical Exponent PDEs.
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