

Nicolas MARQUE

PERSONAL DATA

PLACE AND DATE OF BIRTH: Toulouse, France | 22 March 1993
ADDRESS: Potsdamer Strasse 182, 14469, Potsdam, Germany
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EDUCATION

DEC 9 2019	PhD defense: obtention of the diploma of <i>docteur de l'Université de Paris</i> Reviewers: Prof. Jan METZGER, Prof. Andrea MONDINO Advisor: Dr. Paul LAURAIN President of the Jury: Prof. Laurent HAUSWIRTH Jury: Dr. Ilaria MONDELLO, Prof. Frédéric HÉLEIN, Prof. Olivier DRUET, Dr. Yann BERNARD
SEPT 2016-Dec 2019	PhD at Paris Diderot Research team Geometry and Dynamics Advisor: Prof. Paul LAURAIN
SEPT 2015	Master's degree in Advanced Mathematics for research at ENS , Lyon Analysis of PDEs and Geometry with courses : <i>Minimal Surfaces</i> by Olivier Druet, <i>Homogeneization</i> by Andro Mikelic <i>Symplectic Geometry</i> by Jean-Claude Sikorav <i>Optimal Transport</i> by Ivan Gentil <i>Evolution equations and boundaries</i> by Sylvie Benzoni Final Grade : 17/20 with mention : Very Good.
SEPT 2014	Master's degree in Mathematics for teaching at ENS , Lyon Preparation for the french national competitive exam, <i>l'Agrégation</i> . Final Results : 8 th nationwide.
SEPT 2013	Master's degree in Mathematics at ENS , Lyon, 1 st year Final Grade : 16/20 with mention : Very Good.
SEPT 2012	Bachelor's degree in Mathematics at ENS , Lyon Final Grade : 15/20 with mention : Good.
SEPT 2010-AUG 2012	Preparation for the French competitive exam for the admittance to French <i>Grandes Ecoles</i> at Lycée Pierre de Fermat , Toulouse. Final Results : Admission to ENS of Lyon.
SEPT 2007-AUG 2010	High School education at Lycée Saint Exupéry , Blagnac. Final Grade : 19.75/20 with <i>Summa Cum Laude</i> .

PROFESSIONAL SITUATION

APR 2020-TODAY	Temporary employee at POTSDAM UNIVERSITÄT. Post-doc supervisor: Jan Metzger.
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WORK EXPERIENCE

SEPT 2019-MARCH 2020	Teaching assistant at DIDEROT UNIVERSITY, Paris.
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SEPT 2016-DEC 2019	PhD under the supervision of Paul Laurain : <i>Moduli spaces of Willmore immersions</i> , teaching assistant for Bachelor students. Financed through CDSN.
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MARCH 2016-JULY 2016	Intern at DIDEROT UNIVERSITY, Paris, under the supervision of Paul Laurain.
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MAY 2014-JULY 2014	Intern at DIDEROT UNIVERSITY, Paris, under the supervision of Paul Laurain.
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MAY 2013-JULY 2013	Intern at PAUL SABATIER UNIVERSITY, Toulouse, under the supervision of Dan Popovici.
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TEACHING ACTIVITIES :

AT POTSDAM UNIVERSITY

APR 2020-JULY 2020	Teaching assistant : PDE theory. Tutoring for Masters Students..
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AT PARIS UNIVERSITY

SEPT 2019-OCT 2019	Courses and tutoring for MRM1. Mathematics et Logic for first year students: 48h.
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JAN 2018-MAY 2018	"Colles" in MM4. Analysis and Algebra for second year students: 24h
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SEPT-DEC 2017, 2018, JAN-AVR 2020	Tutoring in measure theory and integration Measure theory for third year students: 36h per semester.
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JAN 2017-MAY 2017	Tutoring in MM2. Analysis for first year students: 48h
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SEPT 2016-DEC 2016, SEPT 2018-DEC 2018	Tutoring in RM1. Logic for first year students: 36h per semester.
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MATHEMATIC DIFFUSION

OCT 2016-2019	Participation to the <i>Fête de la Science</i> . Yearly event of mathematical diffusion for elementary and secondary students, and more broadly speaking to any person outside academia.
DEC 2019	Supervision of interns at Paris University.
NOV 17-19, MARCH 18-19	Participation to the <i>rencontres master-doctorants</i> . Talks and discussions between master and PhD students to incite interested students to pursue a research career.

ADMINISTRATIVE ACTIVITIES

EDITORIAL ACTIVITIES

2019-2020	Reviewer for MATHEMATISCHE ZEITSCHRIFT.
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EVENT ORGANIZATION

APR 2020-JULY 2020	Co-organization of the <i>Bourbakonfs</i> . Organization of a weekly informal virtual seminar for PhD students of Paris University in order to maintain academic life despite the lockdowns.
NOV 2019	Co-organization of the <i>rencontre master-doctorants</i> . Organization of an informal seminar for master students, followed by a meal and discussions to incite interested students to pursue a research career.
SEPT 2018-APR 2020	Co-organization of the <i>Bourbakettes</i> Organization of a weekly informal seminar for PhD students of Paris University

ADMINISTRATIVE REUNIONS

DÉC 2018	Participation to the ANR day Presentation by a talk of the <i>ANR BLADE</i> project.
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RESEARCH ACTIVITIES

CONFERENCES

SCHED: FEB 2021	Speaker at the <i>International Meeting on Lorentzian Geometry</i> Title of the talk: <i>Conformal Gauss map and applications</i>
JULY 2019	Invited speaker to <i>1st Joint Meeting Brazil-France in Mathematics</i> , Rio de Janeiro Title of the talk: <i>An exploration of Willmore bubbling</i>

SEMINARS

FEB 2020	Invited speaker to the <i>Geometry seminar</i> , Melbourne Title of the talk: <i>Geometry of the conformal Gauss map</i>
NOV 2019	Invited speaker to the <i>Differential Geometry seminar</i> , Potsdam Title of the talk: <i>An exploration of Willmore bubbling</i>
NOV 2019	Invited speaker to the <i>Differential Geometry seminar</i> , Nancy Title of the talk: <i>An exploration of Willmore bubbling</i>
OCT 2019	Invited speaker to the <i>Geometry seminar</i> , Brussels Title of the talk: <i>On the compactness of Willmore immersions</i>
OCT 2019	Invited speaker to the <i>Geometry seminar</i> , Paris Title of the talk: <i>On the compactness of Willmore immersions</i>
JULY 2019	Invited speaker to the <i>Geometry seminar of UFC</i> , Fortaleza Title of the talk: <i>An exploration of Willmore bubbling</i>

PHD SEMINARS

APRI 2020	Speaker for the <i>Bourbakonfs</i> (informal virtual seminar for PhD students) An analytic look at the sphere eversion.
MAY 2019	Speaker for the <i>Bourbakettes</i> (informal seminar for PhD students) A panorama of curvature notions and their nuances.
NOV 2018	Speaker for the <i>rencontre master-doctorants</i> . Title of the talk : <i>Elastic energies in geometry</i> .
APR 2018	Speaker for the <i>Bourbakettes</i> An introduction to Bryant formalism and conformal geometry.
NOV 2017	Invited speaker for the <i>séminaire des doctorants</i> , Amiens Title of the talk : <i>Elastic energies and Willmore surfaces</i>
NOV 2017	Speaker for the <i>Bourbakettes</i> An introduction to semi-Riemannian geometry and relativity theory.
JAN 2017	Speaker for the <i>Bourbakettes</i> An introduction to concentration phenomena.

RESEARCH VISITS

FEB 2020	Invitation to Melbourne by <i>Yann Bernard</i> .
JUNE-JULY 2019	Beneficiary of the COFECUB program, stay in Fortaleza thanks to the invitation of <i>Jorge Lira</i> . Beginning of a collaboration with <i>Jorge Lira</i> and <i>Rodrigo Avalós</i> .

CONFERENCES, SUMMER SCHOOLS AND SEMINARS

- JAN 2020 | *Geometry Day*, Créteil University, Créteil.
- DEC 2019 | *Advances in Geometric Analysis*, Université de Paris, Paris.
- MAY 2019 | *Variational Problems and the Geometry of Submanifolds*, CIRM, Luminy.
- APR 2019 | *Three days' workshop in mathematical general relativity*, UMPA, Lyon.
- DEC 2018 | *Workshop in Geometric Analysis*, IHP, Paris.
- MAY 2018 | *Oberwolfach Seminar: Spectral estimates on Noncompact Manifolds, applications to Geometry*, Oberwolfach.
- JUNE 2017 | *Nonlinear Analysis in Rome*, NDU, Rome.
- 2016-2020 | Weekly attendance to the *Geometry seminar*, Paris
- SEPT 2015 | *Mathematics in General Relativity*, IHP, Paris.
- MARCH 2014 | *Analysis spring school*, SNS, Pise.

PUBLICATIONS LIST

PUBLICATIONS IN PEER-REVIEWED JOURNALS

- APR 2020 | *Minimal Bubbling for Willmore Surfaces*. International Mathematics Research Notices (2020). <https://doi.org/10.1093/imrn/rnaa079>
- FEB 2020 | *Conformal Gauss Map Geometry and Application to Willmore Surfaces in Model Spaces*. Potential Anal (2020). <https://doi.org/10.1007/s11118-020-09825-9>

PREPRINTS

- SEPT 2020 | *Energy Estimates for the Tracefree Curvature of Willmore Surfaces and Applications*, arXiv:2009.10180, joint work with Y. Bernard and P. Laurain.
- APR 2019 | *An ε -regularity result with mean curvature control for Willmore immersions and application to minimal bubbling*, arXiv1904.015215.

BOOKS/RESEARCH MEMOIRS

- DEC 2019 | *Moduli spaces of Willmore immersions* (PhD thesis).

LANGUAGES

CASTELLANO: B1 (once C1, but fell out of practice)
DEUTSCH: A1
ENGLISH: C2
FRANÇAIS: Mother tongue
NIHON : Beginner

INFORMATIC LANGUAGES

MAPLE : Good knowledge (formal calculus and animations)
SCILAB : Good knowledge (scientific calculus and animations)
LATEX : Mastered

PROFESSIONAL INTERESTS

Geometric Analysis, namely the closure of the minimal surfaces and Willmore surfaces subdomains. Semi-riemannian geometry, conformal gauss map and branching consequences.
Relativity theory, mathematics for physics and physics itself.
Interaction between academia and civil society.
Developing : Geometric Measure Theory, DPW techniques.

ACTIVE RESEARCH SUBJECTS

Willmore bubble trees analysis
Conformal Gauss map
Willmore surfaces classification
Fourth order PDEs
Einstein equations
Lovelock theories, Bach spaces