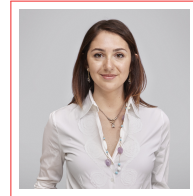


Annalaura Stingo

Ph.D. student

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Biographical Information

Birth **May 27, 1991**, in Naples - Italy.
Citizenship **Italian**.

Research Interests

Partial Differential Equations Global existence for nonlinear critical evolution equations with small data, Klein-Gordon equation, Wave equation, Microlocal Analysis

Current Position

Mars- August 2018 **Attaché Temporaire d'Enseignement et Recherche**, Université Paris 13, Villetaneuse - France.
Ph.D. student in Pure Mathematics, LAGA - Université Paris 13, Villetaneuse - France.

Education

2014 **Ph.D. student in Pure Mathematics with teaching activities**, LAGA - Université Paris 13, Villetaneuse - France.
2013–2014 **Double Master Degree in Mathematics**, *Master thesis*: The problem of global existence for the nonlinear Klein-Gordon equation (*Supervisors: J.-M. Delort*), Université Paris 13, Paris - France, Università degli Studi di Napoli Federico II, Naples - Italy.
2009–2012 **Bachelor degree in Mathematics**, *Bachelor thesis*: Metodo di Poincaré sulla perturbazione di orbite periodiche (*Supervisor: M. Berti*), Università degli Studi di Napoli Federico II, Naples - Italy.

Ph.D. Thesis Description

Title *Global Existence Problems for Nonlinear Critical Evolution Equations with Small Data and Semiclassical Analysis*
Supervisor Jean-Marc Delort

Description The study of global existence of solutions to critical nonlinear evolution equations, with small data, rapidly decreasing to infinity goes back to the '80s, and to the works of John, Klainerman,... The aim is to show that if a linear equation, e.g. the Klein-Gordon equation, is perturbed by some nonlinearities, small and sufficiently decaying data give rise to solutions globally defined in time. The critical case corresponds to "long range" nonlinearities, that have, when evaluated on a linear solution, an uniform norm which is not integrable in time at infinity. For the Klein-Gordon equation, this corresponds to a logarithmic in time perturbation of the phase oscillation of the linear solution. In a first time, our purpose is to combine a semiclassical microlocal analysis, introduced by Delort, with a vector field method to study global existence of solutions to quasi-linear Klein-Gordon equations in dimension 1, when initial data are small, smooth, and mildly decaying at infinity, under a null condition on the nonlinearity, previous results known only for compactly supported data. Successively, we want to apply the same ideas to a coupled Wave/Klein-Gordon system.

Papers

- 2015 **Global existence and asymptotics for quasi-linear one-dimensional Klein-Gordon equations with mildly decaying Cauchy data**, 46 pp., To appear in Bulletin of SMF.
- 2015 **1D quasi-linear Klein-Gordon equations: global existence and asymptotics of small amplitude solutions**, 9 pp., Les Actes du Colloque EDP-Normandie 2015.
- In progress **Global existence and asymptotics for a quadratic quasilinear wave-Klein-Gordon coupled system in two space dimension.**

Organized Conferences

- Juin 2018 **Young researchers on the analysis of dispersive equations**, *financed by Fondation L'Oréal-UNESCO within the program "For Women in Science"*, Université Paris 13.

Expository Talks and Posters

- 2017 **Analyse asymptotique des équations d'évolution**, *Talk: "Global existence of small solutions for the cubic 1D Klein-Gordon equations"*, CIRM - France.
- 2017 **Seminar on Mathematical General Relativity (LJLL)**, *Talk: "Global existence and asymptotic behavior for small solutions to 1D quasi-linear cubic Klein-Gordon equations"*, Paris - France.
- 2017 **Séminaire des Doctorants (Université Cergy-Pontoise, Université Rennes 1, IMJ-PRG, Université de Nantes)**, *Talk: "Existence globale et comportement asymptotique pour une équation de Klein-Gordon quasi-linéaire en dimension 1 d'espace avec données initiales doucement décroissantes à l'infinie"*, Cergy - France.
- 2016 **Rencontres Doctorales Lebesgue 2016**, *Talk: "Existence Globale de Petites Solutions pour l'Équation de Klein-Gordon Cubique 1D"*, Angers - France.
- 2015 **EDP-Normandie**, *Poster: "Existence globale et comportement asymptotique pour une équation de Klein-Gordon quasi-linéaire en dimension 1 d'espace avec données initiales doucement décroissantes à l'infinie"*, Havre - France.

Teaching Activities

- 2017-2018 **Teaching assistant in Linear Algebra 2**, 2nd year bachelor's degree in Mathematics, Université Paris 13, France.
- 2017-2018 **Teaching assistant in Linear Algebra 1**, 1st year bachelor's degree in Mathematics, Université Paris 13, France.
- 2016-2017 **Teaching assistant in Calculus**, 1st year bachelor's degree in Mathematics, Université Paris 13, France.
- 2015-2016 **Teaching assistant in CP2I - Préparation Certificat Informatique et Internet**, 1st year bachelor's degree in Mathematics, Université Paris 13, France.
- Teaching assistant in Mathematical Tools**, 1st year bachelor's degree in Mathematics, Université Paris 13, France.
- 2014-2015 **Teaching assistant in Mathematics**, 1st year bachelor's degree in Economics, Université Paris 13, France.

Grants

- 2017 **For Women in Science grant**, financed by Fondation L'Oréal-UNESCO.

Other Activities

- 2015-2017 **Organisation of the PhD Students' Seminar**, Université Paris 13, France.
- 2015-2017 **Co-Organisation of the PDE's Work Group**, École Normale Supérieure de Paris, France.

Computer Skills

Programming Languages	Fortran	Operating Systems	Linux
Editing & Office	OpenOffice, L^AT_EX		

Languages

Italian	mother tongue
English	Fluent
French	Fluent
Spanish	Fluent