

# CURRICULUM VITAE

GIUSEPPE DELLA SALA

## Personal information

Born in Bologna on 4 June 1980.

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## Research Interests

My main interests are in the field of Several Complex Variables, in particular CR geometry, and includes topics related to the analysis of certain PDEs and the  $L^2$ -theory of the  $\bar{\partial}$ -problem, as well as to the action of analytic transformations on smooth manifolds.

## Studies - Positions

**Jul 1999** Secondary school diploma at L.S.S. “N. Copernico” in Bologna.

**Sep 1999** Admission to the of Scuola Normale Superiore in Pisa, Science Class.  
Enrolling at Pisa University (undergraduate course in Mathematics).

**Oct 2003** Graduation in Mathematics at Pisa University.

**Nov 2003** Ph.D. student in Mathematics at SNS in Pisa.

**Dec 2004** Diploma in Mathematics at SNS.

**Jan-Sep 2007** Research collaboration with Pisa University.

**Sep 2007** Ph.D. in Mathematics at SNS of Pisa.

**Nov 2007-Oct 2008** Post-doc at the IMB in Dijon (France).

**Dec 2008- Nov 2012** Post-doc at the University of Vienna.

**Dec 2012 - Aug 2015** I obtain a grant (project P24878-N25) by the Austrian Science Fund (FWF); senior post-doc at the University of Vienna.

**from Aug 2015** Assistant professor at the American University of Beirut (Lebanon).

## 1 Scientific activity, visits, talks

**Mar 2004** Talk on “Levi piattezza e basi di Stein” at Scuola Normale Superiore.

**Jul 2004** I take part to the “École d’été d’Analyse Complexe et Géométrie” in Mahdia (Tunisia).

**Sep 2004** Conference on “CR geometry and Partial Differential Equations”, organized by CIRM in Levico (Italy).

**Sep 2004** Conference on “Recent advances in Complex and Real Geometry”, organized by CIRM in Levico (Italy). Give a talk on “Bordi di varietà complesse in domini strettamente pseudoconvessi non compatti di  $\mathbb{C}^n$ ”.

**May 2005** Conference on “Recent advances in Complex and Real Geometry”, organized by CIRM in Levico (Italy).

**Sep 2005** Take part to the “Conference on Complex Analysis in honour of H.Skoda”, organized by Université Pierre et Marie Curie in Paris.

**Jan-Feb 2006** Guest of Prof. N.Shcherbina at the Bergische Universität in Wuppertal (Germany).

**Apr-Jul 2006** Guest of Prof. N.Shcherbina at the Bergische Universität in Wuppertal (Germany).

**May 2006** Conference on “Degenerate structures in Complex Analysis - From the past to the future”, Bergisch Gladbach (Germany), organized by the Bergische Universität of Wuppertal.

**Oct 2006** Conference on “Recent advances in Complex and Real Geometry”, organized by CIRM in Levico (Italy).

**Apr 2007** Reviewer for Mathematical Reviews.

**Sep 2007** Take part to the “School-Conference in Complex Analysis and Geometry” organized by the CIRM in Luminy. I give a talk on “Liouville-type results for foliations with complex leaves”.

**Nov 2007** I give a talk on “Résultats de type Liouville pour des feuilletages à feuilles complexes” at the IMB in Dijon.

**Feb 2008** Qualification aux fonctions de Maîtres de Conférences, in section 25 (Mathematics),

**May 2008** I take part to the “Journées sur les mesures harmoniques et les feuilletages” in Dijon.

**Ott 2008** Visitor for three weeks at the PIMS in Vancouver.

**Dec 2008** I give a talk with the title “Embedding properties of Levi flat manifolds” at Vienna University.

**Sep 2009** I take part to the “Ecole d’été: uniformisation de familles de variétés complexes” in Dijon.

**Oct-Dec 2009** I take part to the workshop “The  $\bar{\partial}$ -Neumann problem: Analysis, Geometry and Potential theory” at the ESI in Vienna.

**Apr 2010** Conference on “The  $\bar{\partial}$ -Neumann and Spectral Analysis of Hankel Operators”, organized by the CIRM in Luminy.

**Apr 2010** I give a talk with title “The local equivalence problem for Levi-fat hypersurfaces” at Vienna University.

**Jun 2010** Conference on “CR geometry and Partial Differential Equations - IV”, organized by the CIRM in Levico (Italy). I give a talk with title “Local equivalence of smooth Levi flat hypersurfaces”.

**Nov 2010** Talk on “A Borel-type result for smooth CR functions” at Vienna University.

**Dec 2010** I take part to the continuation of the Workshop “The  $\bar{\partial}$ -Neumann problem: Analysis, Geometry and Potential theory” at the ESI in Vienna. Talk on “A Borel-type result for smooth CR functions”.

**Jan 2011** Talk on “Properties of the equivalence locus of CR submanifolds” at Vienna University.

**Sep 2011** I take part to the “Minisymposium on Complex Analysis” in Krems. Talk on “Watson’s lemma and the Flatness of CR functions”.

**Oct 2011** Talk on “Watson’s lemma and the Flatness of CR functions” at Vienna University.

**Nov 2011** Talk on “The equivalence locus of CR submanifolds” at the University of Ljubljana.

**Mar 2012** Talk on “Local analytic transformations of smooth submanifolds of  $\mathbb{R}^n$ ” at Vienna University.

**Jun 2012** Conference on “Complex Analysis and Partial Differential Equations”, organized by the University of Addis Ababa, Ethiopia. I give a talk on “Bergman spaces of natural G-manifolds”.

**Sep 2012** I take part to the “Krakow-Vienna workshop on Pluripotential Theory and Several Complex Variables” in Vienna. Talk on “Real-analytic local transformations of smooth submanifolds of  $\mathbb{R}^n$ ”

**Sep 2012** Conference on “Several Complex Variables” at the University of Ljubljana. Talk on “Real-analytic local transformations of smooth submanifolds of  $\mathbb{R}^n$ ”.

**Nov 2012** Talk on “Non-embeddability of certain classes of Levi-flat manifolds” at the University of Vienna.

**Jan 2013** Talk on “Bergman spaces of G-manifolds” at the University of Vienna.

**Mar 2013** Talk on “Curves invariant under analytic diffeomorphisms” at the University of Vienna.

**Sep 2013** Participation to the “Krakow-Vienna workshop 2013” in Krakow.  
Talk on “Nowhere-analytic smooth curves with non-trivial analytic isotropy”.

**from Oct 2013** I take part to the organization of the Complex Analysis seminar at the University of Vienna.

**Oct 2013** Referee for the “Annali della Scuola Normale Superiore di Pisa - Classe di Scienze”.

**Oct 2013** Talk on “Nowhere-analytic smooth curves with non-trivial analytic isotropy” at the University of Vienna.

**Nov 2013** Talk on “Stationary discs for finite type hypersurfaces” at the University of Vienna.

**Mar 2014** Participation to the KAWA-NORDAN “Complex analysis workshop” at the CIRM in Luminy, France

**Jun 2014** Conference on “CR geometry and Partial Differential Equations - VI” in Levico (Italy).

**Oct 2014** Visitor at the university of Sao Paulo, Brasil.

**Nov 2014** Seminar talk with title “Analytic transformations of smooth submanifolds” at the American University of Beirut, Lebanon.

**Jan 2015** Seminar talk with title “Analytic transformations of smooth submanifolds” at the Texas A&M at Qatar in Doha, Qatar.

**Mar 2015** Participation to the KAWA in Pisa, Italy.

**May 2015** Participation to the “International Conference on Complex Geometry and Several Complex Variables” in Shanghai, China.

**May 2015** Seminar talk at the University of Ljubljana.

**Aug 2015** Participation to the “VIII Workshop on Geometric Analysis of PDE and Several Complex Variables” in Serra Negra, Brasil

**Oct 2015** Fellowship at the Center for Advanced Mathematical Sciences, American University of Beirut

**Nov 2015** Talk at the workshop “Several complex variables and CR geometry” at the ESI in Vienna

**Nov 2015** Talk at the Analysis and Geometry seminar of the Mathematics Department of the American University of Beirut

**Mar 2016** Seminar Talk at Notre Dame University, Louaize, Lebanon

**May 2016** Talk at the LSMS meeting at Lebanese University (Hadath campus), Lebanon

**May 2016** Talk at the Conference on Differential Geometry held at the American University of Beirut in May 26-28

**Jul 2016** Visit and seminar talk at the University of Sao Paulo

**Jul 2016** URB grant with title “Topics in CR Geometry”

**Nov 2016** Referee for the Journal of Geometric Analysis

**Feb 2017** Talk at Lebanese University (Fanar campus), Lebanon

**May 2017** I take part in the organization of the “Conference on Complex Geometry and PDE” at the American University of Beirut

**Oct 2017** Referee for the Iranian Journal of Science and Technology

**Nov 2017** Talk at the Center for Advanced Mathematical Sciences, American University of Beirut

## Papers - preprints

1. G.Della Sala and A.Saracco, *Non compact boundaries of complex analytic varieties*, International Journal of Mathematics (2007), vol. 18, n.2 203-218 (arXiv:math/0503430)
2. G.Della Sala, *Liouville-type results for foliation with complex leaves*, Annales de L’Institut Fourier, vol. 60, n.2 (2010) 711–725 (arXiv:0708.1550)
3. G.Della Sala and A.Saracco, *Semi-global extension of maximally complex submanifolds*, Bulletin of the Australian Mathematical Society, vol. 84 (2011) (arXiv:math/0607747)
4. G.Della Sala, *Local equivalence problem for Levi flat hypersurfaces*, Proceedings of the American Mathematical Society, 139 (2011), n. 7, 2449-2461 (arXiv:1003.1592v1)
5. G.Della Sala and J.J. Perez, *Unitary representations of unimodular Lie groups in Bergman spaces*, Mathematische Zeitschrift, vol. 272 (2011) p. 483-496
6. G.Della Sala, R. Juhlin and B.Lamel, *Formal Theory of Segre Varieties*, Illinois Journal of Mathematics, vol. 56, no. 1 (2012), 101-125
7. G.Della Sala and B.Lamel, *Asymptotic approximations and a Borel-type result for CR functions*, International Journal of Mathematics, vol 24, no. 11 (2013)
8. G.Della Sala and J.J. Perez, *Bergman spaces of natural G-manifolds*, Advances in Mathematics, vol. 247 (2013), p. 103-122
9. G.Della Sala, *Non-embeddability of certain classes of Levi flat manifolds*, Osaka Journal of Mathematics, vol. 51, no. 1 (2014), p. 161-169
10. G.Della Sala and B.Lamel, *On the vanishing rate of smooth CR functions*, Proceedings of the American Mathematical Society series B, vol. 1 (2014), p. 23-32
11. G.Della Sala, R. Juhlin and B.Lamel, *Deformations of CR manifolds, parametrizations of automorphisms, and applications*, Mathematical Research Letters, vol. 22, n. 4 (2015)

12. F.Bertrand and G.Della Sala, *Stationary discs for smooth hypersurfaces of finite type and finite jet determination*, Journal of Geometric Analysis, vol. 25 (2015)
13. G. Della Sala, B. Lamel and M. Reiter, *Infinitesimal and local rigidity of mappings of CR manifolds*, Contemporary Mathematics, vol. 681 (2017)
14. G. Della Sala, B. Lamel and M. Reiter, *Local and infinitesimal rigidity of hypersurface embeddings*, Transactions of the American Mathematical Society, published electronically (May 2017)
15. F. Abi-Khuzam, F. Bertrand and G. Della Sala, *The star function for meromorphic functions of several complex variables*, to appear in Complex Variables and Elliptic Equations, 2017

#### Lecture notes from conference proceedings

16. G.Della Sala and B.Lamel, *CR functions and their formal expansions*, Bulletin of the Institute of Mathematics Academia Sinica (New Series), vol 8, no. 3 (2013), p. 377-387
17. G.Della Sala and G.Tomassini, *Levi Flatness and Stein basis*, published on the Lecture Notes of *Seminario Interdisciplinare di Matematica*, Vol 3, 2004.

#### Submitted articles / preprints

- G.Della Sala, *Curves homogeneous under analytic transformations*
- G.Della Sala, *Analytic transformations of smooth submanifolds*
- F.Bertrand and G.Della Sala, *Riemann-Hilbert type problems with constraints*
- F. Bertrand, G. Della Sala and B. Lamel *Jet determination of smooth CR automorphisms and generalized stationary discs*
- P. Cordaro, G. Della Sala and B. Lamel, *The Borel map in locally integrable structures*

## Books

1. G.Della Sala, A.Saracco, A.Simioniuc and G.Tomassini, *Lectures on complex analysis and analytic geometry*, vol.3, Edizioni della Normale, Pisa (2006), xx+430
2. G.Della Sala, *Geometric properties of non-compact CR manifolds* (Ph.D. Thesis), Edizioni della Normale, Pisa 2010 pp. viii-92,  
<http://dl.dropbox.com/u/2345432/phdthesis.pdf>