

Report of the academic activity during the PhD programme 2017-2020

PhD Student: Chalmoukis Nikolaos

Supervisor: Prof. Nicola Arcozzi

Tutor: Prof. Nicola Arcozzi

Circle: 33°

1. Courses and seminars followed

- *Hodge Theory*
Duration: 30h
Place: University of Bologna
Period: Spring 2017 - 2018
Professor: Luca Migliorini
- *Partial differential equations*
Duration: 30h
Place: University of Bologna
Period: Spring 2017 - 2018
Professor: Maria Manfredini
- *The De Branges Theory of Hilbert Spaces of Entire Functions and its Applications to Spectral Theory of differential Operators*
Duration: 10h
Place: University of Bologna
Period: Spring 2018-2019
Professor: Anton Baranov
- *Functional Analysis and Complex Analysis*
Duration: 10h
Place: University of Bologna
Period: Spring 2018-2019
Professor: Nicola Arcozzi

1. Courses and seminars given

I gave the series of minicourses

- *An introduction to interpolation by sequences in reproducing kernel Hilbert spaces*
Duration: 10h
Place: University of Bologna
Period: November 2019 - January 2020

Lectures available online: <https://site.unibo.it/complex-analysis-lab/en/contents/videos>

- *Introduction to the theory of complete Pick spaces*
Duration: 10h
Place: Aristotle University of Thessaloniki
Period: June 2020

Also, I followed the series of seminars *Topics in Mathematics* and other seminars organized by the department, in particular the ones organized by the Complex Analysis Lab, the group of complex analysis of the U. of Bologna, of which I am a member.

2. Conferences

- *Workshop su varietà reali e complesse: Geometria, topologia e analisi armonica*
Place: Pisa, Scuola Normale Superiore
Period : February 1 2018 - February 3 2018
- *Analysis Days in Piemonte*
Place: Piemonte
Period: May 7 2018 - May 11 2018
I gave a talk entitled "Interpolation in the Dirichlet space on the unit disc".
- *Workshop on complex analysis and operator theory*
Place: Barcelona
Period: May 26 2018- May 30 2018
- *Advanced courses in operator theory and complex analysis XVI edition*
Place: Università di Bologna, Italy
Period: June 11 - June 14 2018
- *New developments in complex analysis and function theory*
Place: University of Crete, Greece
Period : July 2 2018- July 6 2018
- *Workshop su varietà reali e complesse: Geometria, topologia e analisi armonica*
Place: Pisa, Scuola Normale Superiore
Period : February 21 2019 - February 23 2019

- *Explorations in Harmonic Analysis and other realms*
Place: Tel Aviv, Israel
Period: February 10- February 14, 2019

- *Analysis Days in Piemonte*
Place: Piemonte
Period: May 27 2019 - May 31 2019
I gave a talk entitled "Interpolation in the Dirichlet space on the unit disc".

- *Advanced courses in operator theory and complex analysis XVI edition*
Place: U. Paris-Est Marne-la-Valle, France
Period: June 17 - June 21 2019
I gave a talk entitled "Onto Interpolation for the Dirichlet space and for Sobolev $W^{1,2}(D)$ ".

- *Indam day 2019*
Place: Bari, Italy
Period: June 3 2019

- *Quaternioni sul Conero*
Place: Ancona, Italy
Period: September 12-13, 2019

- *New Trends in Complex Analysis and Fourier Analysis and Operator Theory*
Place: Rome, Italy
Period: September 23 - 27 2019

- *Workshop: "Emergent Trends in Complex Function Theory*
Place: Barcelona, Spain
Period: October 28-31, 2019

- *Interpolation in Spaces of Analytic Functions*
Place: CIRM, Marseille, France
Period: November 18-22, 2019

- *Emergent trends in complex function theory*
Place: Centre de Recerca Matemtica
Period : October 28 2019 - October 31 2019
Talk given: Onto interpolation for the Dirichlet space and for $W^{1,2}(\mathbb{D})$, (contributed talk).

- *Interpolation in Spaces of Analytic Functions*
Place: Centre International de Rencontres Mathématiques, Marsail, France
Period: 18 - 22 November 2019
Talk given: Random interpolation for the Dirichlet space, (contributed talk).

3. Invited talks

- *Random Interpolating sequences in Dirichlet spaces*
Seminars : OnLine seminar on complexanalysis and applied topics.
Time: May 2020
Seminar available online at: <https://www.youtube.com/channel/UCiRdqBeNxXbWaaftY-SN6mg/>
- *Interpolating sequences for the Dirichlet space and for Sobolev $W^{1,2}(\mathbb{D})$*
Seminar: Weakly Seminar of functional analysis.
Place: Saarland University
Time: June 2020.

4. Period Abroad

- *University of Bordeaux*
Period: 10 - 24 February 2020
Collaborators: Prof. Andreas Hartman, Prof. Karim Kellay
- *Aristotle University of Thessaloniki*
Period: June 2020
Collaborators: Prof. Aristomenis Siskakis

4. Papers and Preprints

- N. Chalmoukis, Generalized Integration Operators on Hardy Spaces, Proc. Amer. Math. Soc. 148 (2020), 3325-3337.
- N. Chalmoukis , A. Hartmann, K. Kellay, B.D. Wick, Random interpolating sequences in Dirichlet spaces, arXiv:1904.12529, (Preprint)
- N. Chalmoukis, M. Levi, (2019). Some remarks on the Dirichlet problem on infinite trees. Concrete Operators, 6(1), pp. 20-32.
- N. Chalmoukis, Onto Interpolation for the Dirichlet space and for $W^{1,2}(\mathbb{D})$, 2018arXiv180708193C, (Preprint)

- N. Chalmoukis, G. Stylogiannis A family of Schur multipliers for lower triangular matrices with applications, arXiv:2005.01660, (Preprint)
- N. Chalmoukis, M. Hartz Totally null sets and capacity for Dirichlet type spaces , arXiv:2007.01569 , (Preprint)