

# Dimitra Chompitaki

PHD CANDIDATE - UNIVERSITY OF CRETE

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## EDUCATION

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### PhD Candidate

Heraklion, Greece

DEPARTMENT OF MATHEMATICS AND APPLIED MATHEMATICS, UNIVERSITY OF CRETE.

2017 - PRESENT

- **Areas of Interest:** Analogues of Hilbert's Tenth Problem, Mathematical Logic, Number Theory, Algebra, Theory of Algorithms.
- **Thesis Title (tentative):** Computability in Algebra and Number Theory.
- **Advisor:** Thanases Pheidas

### MSc in Mathematics for Computer Science

Heraklion, Greece

DEPARTMENT OF MATHEMATICS AND APPLIED MATHEMATICS, UNIVERSITY OF CRETE.

2014 - 2016

- **Postgraduate Courses:** Theory of Computation, Theory of Algorithms and Complexity, Algebra II, Discrete Geometry, Coding, Model Theory, Differentiable Manifolds.
- **Thesis Title:** An analogue of Hilbert's Tenth Problem for the ring of exponential sums.
- **Advisor:** Thanases Pheidas

### BSc in Mathematics

Heraklion, Greece

DEPARTMENT OF MATHEMATICS AND APPLIED MATHEMATICS, UNIVERSITY OF CRETE.

2010 - 2014

## RESEARCH PROJECTS AND SCHOLARSHIPS

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### Member (as PhD student) of the research team of the funded project "Problems of Diophantine Nature in Logic and Number Theory" with code MIS 5048407 (Coordinator: Thanases Pheidas).

GREEK AND EUROPEAN UNION RESOURCES, THROUGH THE NATIONAL STRATEGIC REFERENCE FRAMEWORK (NSRF 2014-2020), UNDER THE CALL "SUPPORT FOR RESEARCHERS WITH EMPHASIS ON YOUNG RESEARCHERS (EDBM103)".

Apr. 2020 - Jun. 2021

### Erasmus Scholarship for visiting the University of Concepcion, Chile.

IN THE CONTEXT OF THE ERASMUS+ TRAINEESHIP PROGRAM UNDER THE SUPERVISION OF XAVIER VIDAUX.

Dec. 2019 - Feb. 2020

### Scholarship under the HFRI PhD Fellowship grant (GA. no.2321).

HELLENIC FOUNDATION FOR RESEARCH AND INNOVATION (HFRI) AND THE GENERAL SECRETARIAT FOR RESEARCH AND TECHNOLOGY (GSRT).

Nov. 2017 - Mar. 2020

### Scholarship for Conference and Workshop participation, towards PhD studies.

SPECIAL ACCOUNT FOR RESEARCH FUNDS OF THE UNIVERSITY OF CRETE.

Apr. 2017 - Aug. 2020

## RESEARCH PAPERS

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### Addition and Divisibility in Formal Power Series.

- In preparation.

### Decidability of the theory of addition and the Frobenius map in rings of rational functions.

- To be submitted.
- Co-authors: M. Kamarianakis and T. Pheidas.

### An analogue of Hilbert's Tenth Problem for the ring of exponential sums.

- To be submitted.
- Co-author: T. Pheidas.

## Notes on the decidability of addition and the Frobenius map for polynomials and rational functions.

- Accepted to Reports of Mathematical Logic (2022).
- Co-authors: M. Kamarianakis and T. Pheidas.

## The Diophantine problem for rings of exponential polynomials.

- Accepted to Analli SNS (2021).
- Co-authors: N. Garcia-Fritz, H. Pasten, T. Pheidas and X. Vidaux.

# TALKS AND PARTICIPATION IN CONFERENCES AND WORKSHOPS

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## 13th Panhellenic Logic Symposium 2022

CONTRIBUTED ABSTRACT AND TALK

*Volos, Greece*

*Jul. 2022*

- **Title:** Decidability of the Theory of Addition and the Frobenius Map in Certain Rings of Rational Functions.  
— *Joint work with M. Kamarianakis and T. Pheidas.*

## Second Congress of Greek Mathematicians SCGM-2022

INVITED SPEAKER

*Athens, Greece*

*Jul. 2022*

- **Title:** Decidability results of subtheories of polynomial rings and formal power series.

## Online Logic Seminar

INVITED SPEAKER

*Zoom Platform*

*Jul. 2021*

- **Title:** Decidability results of subtheories of commonly used domains in Algebra and Number Theory.

## XVIII SLALM Latin American Logic Symposium

CONTRIBUTED ABSTRACT AND TALK

*Concepcion, Chile*

*Dec. 2019*

- **Title:** Functional “Pell’s equations” and analogues of Hilbert’s Tenth Problem for certain rings of analytic functions.  
— *Joint work with T. Pheidas.*

## 12th Panhellenic Logic Symposium 2019

MEMBER OF THE ORGANIZING COMMITTEE OF THE SYMPOSIUM.

*Heraklion, Greece*

*Jun. 2019*

## Workshop in Definability and Decidability problems in number theory

INVITED PARTICIPANT

*AIM/ San Jose/ California, USA*

*May 2019*

- supported by a travel grant award of the American Institute of Mathematics (AIM).

## Sage days 98: Women in sage

PARTICIPANT

*Heraklion, Greece*

*Apr. 2019*

## Workshop in Model Theory of Valued fields

PARTICIPANT

*Paris, France*

*Mar. 2018*

- supported by a travel grant award from Institute Henri Poincare (IHP).

## Research School Model Theory, Combinatorics and Valued Fields

PARTICIPANT

*CIRM/ Luminy, France*

*Jan. 2018*

- supported by a travel grant award of the Association for Symbolic Logic (ASL).

## The British Postgraduate Model Theory Conference 2018

PARTICIPANT

*University of Oxford, UK*

*Jan. 2018*

## 11th Panhellenic Logic Symposium 2017

CONTRIBUTED ABSTRACT AND TALK

*Delphi, Greece*

*Jul. 2017*

- **Title:** An analogue of Hilbert’s Tenth Problem for the ring of exponential sums.  
— *Joint work with T. Pheidas.*

## MFO Workshop in Definability and Decidability Problems in Number Theory

INVITED SPEAKER

*MFO/ Oberwolfach, Germany*

*Oct. 2016*

- **Title:** An analogue of Hilbert’s Tenth Problem for the ring of exponentials sums.  
— *Joint work with T. Pheidas.*
- supported by a travel grant award of the Oberwolfach Leibniz Graduate Students (OWLG).

## Logic Colloquium 2016, ASL European summer meeting

University of Leeds, UK

CONTRIBUTED ABSTRACT AND TALK

Aug. 2016

- **Title:** Undecidability of the existential theory of the ring of exponentials sums.  
— *Joint work with T. Pheidas.*
- supported by a travel grant award of the Association for Symbolic Logic (ASL).

## WORK EXPERIENCE

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### Heraklion Secondary Education Department.

Heraklion, Greece

TEACHER OF MATHEMATICS IN HIGH SCHOOL.

2020 - 2021

### University of Crete, Department of Mathematics and Applied Mathematics.

Heraklion, Greece

TEACHING ASSISTANT IN UNDERGRADUATE COURSES.

2014 - 2019

- **Linear Algebra**, Spring 2018-19.
- **Foundations of Mathematics**, Spring 2017-18.
- **Analytic Geometry and Complex Numbers**, Fall 2017-18, Fall 2018-19.
- **Geometry and Linear Algebra**, Fall 2014-15, Fall 2015-16.

### Institute of Applied and Computational Mathematics, FORTH.

Heraklion, Greece

UNDERGRADUATE TRAINING ON STOCHASTIC MODELS OF MEDICAL IMAGE ANALYSIS.

Summer 2014

## OTHER INFORMATION

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- Languages** Greek (native), English (excellent), German (good), Spanish (average).
- Computer Skills** Programming on C and FORTRAN, Sage, TeX, Microsoft Office.
- Hobbies** Contract Bridge, board games.