UEM

Seminários

PMA

2025

Slow motion in one-dimensional reaction-diffusion equations

Professor Dr. Raffaele Folino

01/04

16h

Auditório DMA

DMA Departamento de Matemática

CONEMAT COMUNICAÇÃO NETWORKING EM MATEMÁTICA

UEM Universidade Estadual de Maringá

Universidade Estadual de Maringá

Centro de Ciências Exatas
Departamento de Matemática

PARANÁ
GOVERNO DO ESTADO

D E C L A R A Ç Ã O DMA

DECLARAMOS, para os devidos fins que o Professor Doutor **RAFFAELE FOLINO,** proferiu a palestra intitulada: "*S l o w m o t i o n i n o n e - d i m e n s i o n a l r e a c t i o n - d i f f u s i o n e q u a t i o n s*", no âmbito dos Seminários do Programa de Pós-Graduação em Matemática da Universidade Estadual de Maringá, em 01/04/2025.

Para que conste a verdade, firmamos a presente.

Maringá/PR., 01 de abril de 2025.

Prof. Dr. César Adolfo Hernández Melo
Professor associado do DMA-UEM

Upcoming talks 2024/25

Raffaele Folino (UNAM)

December 12th, 2024

@ 14:15, Seminar room (2nd floor), Alan Turing Building

Title: Slow dynamics in reaction-diffusion equations

Abstract: When I started my PhD at the University of L'Aquila, the main topic of my research activity concerned the analysis of a particular phenomenon, known in literature as metastability, that some one-dimensional reaction-diffusion (R-D) equations exhibit. The aim of this talk is to briefly review the main results obtained in the past years and, in particular, to focus on the case of a R-D equation with a Perona-Malik type diffusion.

Nadia Ansini (Sapienza University)

January 16th, 2025

@ 14:30, Seminar room (2nd floor), Alan Turing Building

Title: TBA

Abstract: TBA

Lars Eric Hientzsch (KIT)

January 30th, 2025

@ 14:30, Seminar room (2nd floor), Alan Turing Building

Title: TBA

Abstract: TBA

UNIVERSITÀ DEGLI STUDI DELL'AQUILA

DISIM Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica

For further details, please email:

gennaro.ciampa@univaq.it - antonio.esposito3@univaq.it - emanuela.radici@univaq.it - stefano.spirito@univaq.it

Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica
UNIVERSITÀ DEGLI STUDI DELL'AQUILA

L'Aquila, December 16th, 2024

To whom it may concern,

On behalf of the organisers of the Mathematical Analysis Seminars at the Department of Information Engineering, Computer Science and Mathematics of the Università degli Studi dell'Aquila, I hereby certify that Dr Raffaele Folino, Universidad Nacional Autónoma de México (UNAM), gave a seminar entitled "Slow dynamics in reaction-diffusion equations" on the 12th of December, 2024.

Should you need further details, please do not hesitate to contact me.

Yours faithfully,

Dr Antonio Esposito

Dr Antonio Esposito
Assistant Professor (RTDb) in Mathematical Analysis
Department of Information Engineering, Computer Science and Mathematics,
Università degli Studi dell'Aquila,
Via Vetoio 1, Coppito,
67100 L'Aquila, Italy.

email: antonio.esposito3@univaq.it
web: https://sites.google.com/view/antonioespositomath

UNIVERSITÀ DEGLI STUDI DELL'AQUILA
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Dipartimento di Ingegneria e Scienze dell'Informazione e Matematica

La FACULTAD DE CIENCIAS de la UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

a través de la

Secretaría de Asuntos Estudiantiles

otorga la presente

C O N S T A N C I A

a

RAFFAELE FOLINO

por su valiosa participación en la

Jornada Universitaria de Orientación Vocacional,

realizada el 26 de abril de 2024 en la Facultad de Ciencias, UNAM.

ATENTAMENTE
"POR MI RAZA HABLARÁ EL ESPÍRITU"
Ciudad Universitaria, Cd. Mx. a 23 de mayo de 2024.
La Secretaria de Asuntos Estudiantiles

FACULTAD DE CIENCIAS

Dra. Gabriela Murguía Romero

SECRETARÍA DE ASUNTOS ESTUDIANTILES

JORNADA UNIVERSITARIA DE ORIENTACIÓN VOCACIONAL
FACULTAD DE CIENCIAS

ANIVERSARIO 1939 · 2024

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EL INSTITUTO DE INVESTIGACIONES EN
MATEMÁTICAS APLICADAS Y EN SISTEMAS DE LA
UNIVERSIDAD NACIONAL AUTÓNOMA DE MEXICO

OTORGAN LA PRESENTE CONSTANCIA AL:

DR. RAFFAELE FOLINO

POR SU PARTICIPACIÓN COMO MIEMBRO DEL

COMITÉ ORGANIZADOR DEL COLOQUIO IIMAS

DURANTE EL 2023

Enero 18 de 2024
Ciudad Universitaria, Cd. Mx.

Dr. Ramsés Mena Chávez
Director
Instituto de Investigaciones en
Matemáticas Aplicadas y en Sistemas

siam Mexico Section

Building bridges for interdisciplinary research

Reunión anual SIAM Sección México

7 a 9 de junio de 2023

La Sección México de la Sociedad para las Matemáticas Industriales y Aplicadas otorga la presente

Constancia de participación

a Raffæle Folino por su coordinación del Minisimposio

Ecuaciones Diferenciales Parciales no Lineales: Análisis, Numérico y Aplicaciones

CIMAT

Mayra Núñez López
Vicepresidente SIAM México

ITAM

Ursula Iturrarán

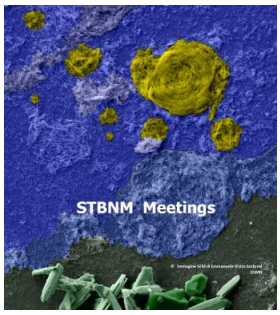
Ursula Iturrarán Viveros
Presidente SIAM México

UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO
POR MI RAZA HABLARÁ EL ESPÍRITU

Università Ca'Foscari Venezia

Department of Molecular Science and Nanosystems

PhD Programme in Science and Technology of Bio and Nanomaterials



You are kindly invited to the seminar

Spectral stability of weak dispersive shocks in quantum hydrodynamics with linear and non-linear viscosity

Raffaele Folino

Universidad Nacional Autónoma de México (UNAM)

February 22nd, 2023
At 11.00 a.m. in Aquarium 4.1
And in videoconference at https://zoom.us/j/82165202004
PW: seminar1

Abstract
Spectral stability of weak dispersive shocks in quantum hydrodynamics with linear and non-linear viscosity In this talk, I consider compressible viscous-dispersive Euler systems in one space dimension in the context of quantum hydrodynamics. In particular, the dispersive term is due to quantum effects described through the Bohm potential, while the viscosity term is either linear or nonlinear. The main goal is to prove that small-amplitude viscous-dispersive shock profiles for the systems under consideration are spectrally stable. The proof is based on spectral energy estimates, for which the monotonicity of the profiles in the small-amplitude regime plays a crucial role.
This is a joint work with Ramon Plaza (MyM-IIMAS-UNAM) and Delyan Zhelyazov (MyM-IIMAS-UNAM).

The Organizer: Prof. Paolo Musolino
The Coordinator: Prof. Flavio Rizzolio

From: comunicazioni.disim@univaq.it
Subject: Annuncio Seminari Giulia Carigi e Raffaele Folino 19/10/2022 - 14:30
Date: 13 October 2022 at 12:28
To:

Dear all,

this is to announce two upcoming seminars given by Giulia Carigi (University of L'Aquila) and Raffaele Folino (Universidad Nacional Autónoma de México) which will be held at UNIVAQ on Wednesday 19th of October starting at 2:30 pm.

The seminar of Giulia Carigi is part of the "SMAQ seminars" organized by the group "*Stochastic Modelling in Physics, Biology and Population Dynamics*" in L'Aquila (SMAQ).

Remote participation to both seminars will also be possible via the zoom link:

https://zoom.us/j/87571297606?pwd=dEhQdlcwZERZbXp4TElmcUl3Tk1YZz09

ID riunione: 875 7129 7606
Passcode: 618838

Date: October 19, 2022
Hour: 2.30 pm
Room: Room C.1.16, Coppito 2, Univaq
Speaker: Giulia Carigi (University of L'Aquila)

Ergodic properties of a stochastic model for geophysical fluid dynamics

A two-layer quasi-geostrophic (2LQG) model for geophysical flows is studied, with the upper layer being perturbed by additive noise. This model is popular in the geosciences, for instance to study the effects of a stochastic wind forcing on the ocean. A rigorous mathematical analysis however meets with the challenge that the noise configuration is spatially degenerate as the stochastic forcing acts only on the top layer. We will discuss the problem of unique ergodicity and exponential convergence of transition probabilities as well as response theory for stochastic partial differential equations like the 2LQG model.

Date: October 19, 2022
Hour: 4:00 pm
Room: Room C.1.16, Coppito 2, Univaq
Speaker: Raffaele Folino (Universidad Nacional Autónoma de México)

Spectral stability of small-amplitude viscous dispersive shocks in quantum hydrodynamics

In this talk, I consider compressible viscous-dispersive Euler systems in one space dimension in the context of quantum hydrodynamics. In particular, the dispersive term is due to quantum effects described through the Bohm potential, while the viscosity term is either linear or nonlinear. The main goal is to prove that small-amplitude viscous-dispersive shock profi les for the systems under consideration are spectrally stable. The proof is based on spectral energy estimates, for which the monotonicity of the profi les in the small-amplitude regime plays a crucial role. This is a joint work with Ramon Plaza (MyM-IIMAS-UNAM) and Delyan Zhelyazov (MyM-IIMAS-UNAM).

Looking forward to seeing you all.
Best regards,

Alessia Nota and Corrado Lattanzio

Generalized Allen-Cahn and Cahn-Hilliard equations with p-Laplacian in 1-d

Ponente: Raffaele Folino
Institución: IIMAS
Tipo de Evento: Investigación

In this talk, I consider some generalizations of the classical Allen-Cahn and Cahn-Hilliard models in a bounded interval of the real line with no-flux boundary conditions. In particular, the linear diffusion (typical of the classical models) is replaced by the (nonlinear) p-Laplace operator and the reaction term is the derivative of a double well potential with wells of equal depth. After investigating the associated stationary problem and highlighting the differences with the standard results, we focus the attention on the long time dynamics of solutions, proving either exponentially or algebraic slow motion of profiles with a transition layer structure. This is a joint work with Luis López Ríos (IIMAS-UNAM), Ramón Plaza (IIMAS-UNAM) and Marta Strani (University of Venice).

Cuándo	06/10/2022 de 11:00 a 12:00
Dónde	Salón de seminarios "Graciela Salicrup"
Agregar evento al calendario	vCal iCal

Navegación

- Actividades académicas
- Coloquios
- Seminarios en C.U.
  - Seminario de Probabilidad y Procesos Estocásticos.
- Congresos, conferencias, seminarios y encuentros
- Escuelas
- Veranos de Investigación
- Agenda

Usted está aquí: Inicio / Actividades académicas / Seminarios en C.U. / Seminario de Ecuaciones Diferenciales No Lineales (SEDNOL) / Actividades del Seminario de Ecuaciones Diferenciales No Lineales / On reaction processes with hyperbolic or saturating diffusion

On reaction processes with hyperbolic or saturating diffusion

Ponente: Raffaele Folino
Institución: IIMAS-UNAM
Tipo de Evento: Investigación

Cuándo	18/09/2019 de 12:00 a 13:00
Dónde	Salón de seminarios "Graciela Salicrup"
Agregar evento al calendario	vCal iCal

Abstract:

Reaction-diffusion equations are widely used to describe a variety of phenomena such as pattern formation and front propagation in biological, chemical and physical systems. In this talk, I consider different variations of the classic reaction-diffusion equations and, in particular, I focus the attention on two cases: first I present some hyperbolic variations obtained by substituting the Fick's law with a relaxation law of Maxwell-Cattaneo type. Second, I consider the case when the linear diffusion is substituted by a strong saturating diffusion.

After a brief introduction and derivation of the models, the second part of the talk is devoted to the case of a balanced bistable reaction with the aim to extend the results on the metastable dynamics of the solutions to the one-dimensional Allen-Cahn equation. Precisely, I discuss the existence and persistence of metastable patterns both in the hyperbolic framework and in the case of strong saturation diffusion.

The National Autonomous University of Mexico, through the Institute of Applied Mathematics and Systems, extends this certificate to:

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Dr. Raffaele Folino

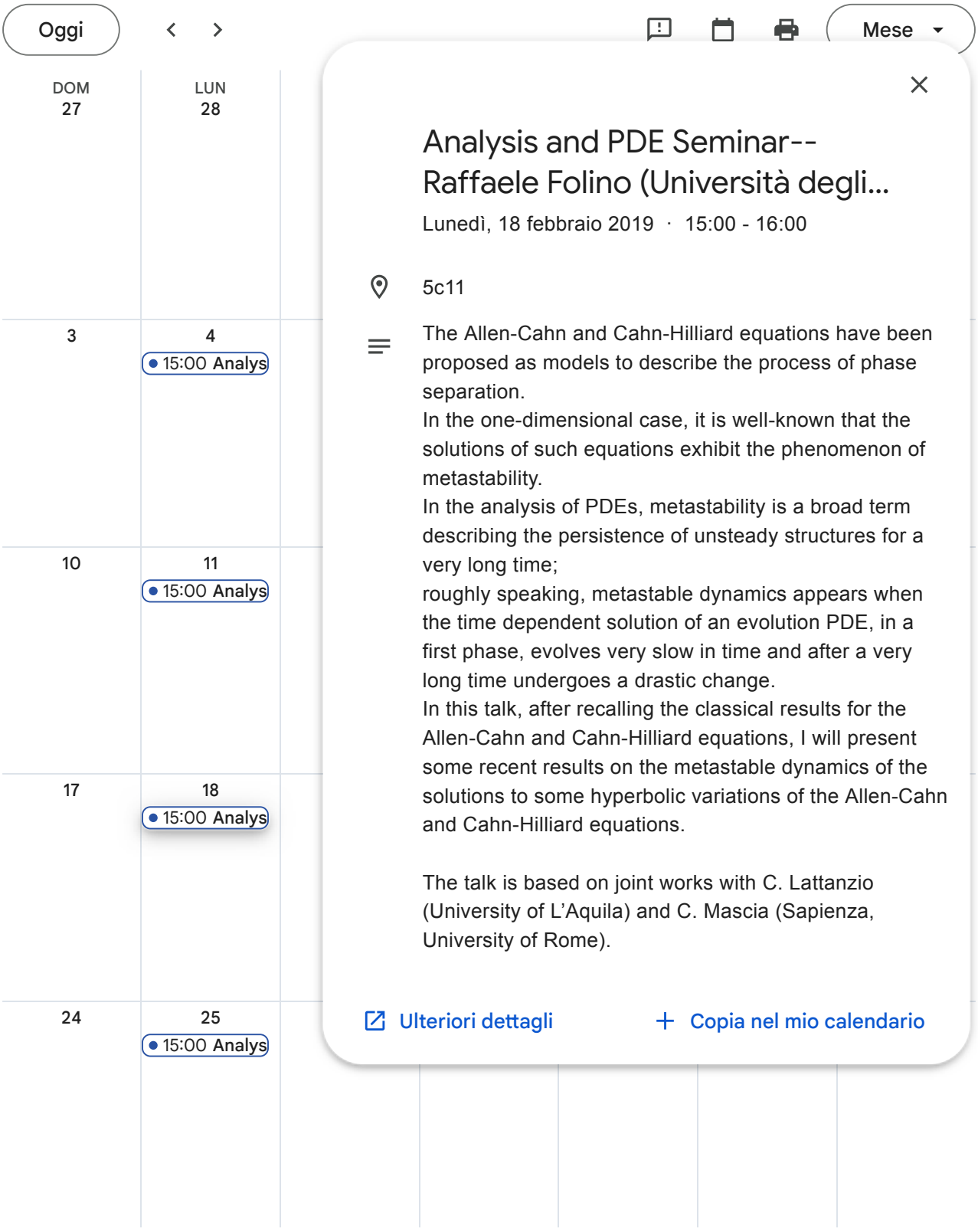
Departamento de Matemáticas y Mecánica, IIMAS

For his highly valuable participation in the **Applied Mathematics Colloquium** held on June 19, 2019, with the presentation:

Metastable Dynamics for Hyperbolic Variations of the Allen-Cahn Equation

"Por mi raza hablará el espíritu"
Ciudad Universitaria, Mexico City, June 19, 2019.

Dr. Ramón Plaza Villegas
Coordinator of the Applied Mathematics Colloquium
IIMAS - UNAM



Sussex Mathematics Seminars

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