

CV of prof. Antonio Greco

Associate professor of Mathematical Analysis at the Faculty of Sciences of the University of Cagliari since May 1, 2005. Formerly Assistant professor at the same Faculty since November 29, 1990. I have been a Ph.D. student at Rome “La Sapienza”, spent one semester at the RWTH Aachen, and got my Ph.D. in Mathematics on July 26, 1994. My advisor was Giovanni Porru (Cagliari).

Memberships:

- American Mathematical Society,
- Department of Mathematics and Computer Science,
- Italian Mathematical Union (UMI),
- National Group for Mathematical Analysis, Probability and their Appl.s (INdAM-GNAMPA).

Research periods abroad:

- Barcelona (Spain), on invitation of Marcello Lucia,
- Basel (Switzerland), on invitation of Catherine Bandle,
- Cologne (Germany), on invitation of Bernd Kawohl,
- Frankfurt (Germany), on invitation of Tobias Weth,
- Granada (Spain), on invitation of Pieralberto Sicbaldi,
- Nancy (France), on invitation of Antoine Henrot,
- Québec (Canada), on invitation of Gérard Philippin.

Further scientific collaborators:

- Lucio Cadeddu (Cagliari);
- Giulio Ciraolo (Milan);
- Elisa Francini (Florence);
- Francesca Gladioli (Sassari);
- Antonio Iannizzotto (Cagliari);
- Sven Jarohs (Frankfurt, Germany);
- Andrea Loi (Cagliari);
- Wolfgang Reichel (Karlsruhe, Germany);
- Raffaella Servadei (Urbino);
- Giuseppe Vigliani (Cagliari).

I also collaborated with Benyam Mebrate Eshete (a postdoctoral student from Dessie, Ethiopia) and with my former graduate students Vincenzino Mascia and Francesco Pisanu.

Invited speaker at Italian and foreign research institutes; **speaker** at national and international meetings; **member of the organizing committee** of:

- “Nonlinear elliptic and parabolic problems”, an international meeting which took place in Cagliari on June 28-29, 2012;
- “Geometric properties of solutions to elliptic and parabolic problems”, held in Santa Margherita di Pula (Cagliari) from September 19 to 21, 2016;
- “Partial differential equations in analysis and mathematical physics”, held in Santa Margherita di Pula (Cagliari) from May 30 to June 1, 2019;
- “Modelli delle scienze della vita”, held in Cagliari on September 23-24, 2024.

Organizer of the Summer School on Mathematical Analysis, which took place in Cagliari in 2019 with lectures by Cristian Enache (Sharjah, UAE) and Marcello Lucia (New York, USA).

Apart from my scientific collaborators, I have been the **inviting person** of:

- Pierluigi Benevieri (São Paulo);
- Andrea Colesanti (Florence);
- Marco Bramanti (Milan);
- Filomena Pacella (Sapienza).

Author of 42 published papers, reviewer for Mathematical Reviews (14 reviews) and zbMATH Open (formerly Zentralblatt MATH, 40 reviews) I have acted as a **referee** for the following journals:

- Analysis and Mathematical Physics;
- Annales de l'Institut Henri Poincaré (C) - Analyse non linéaire;
- Applied Mathematics Letters;
- Boundary Value Problems;
- Communications on Pure and Applied Analysis;
- Electronic Journal of Differential Equations;
- Forum Mathematicum;
- Journal of Applied Analysis;
- Journal of Differential Equations;
- Journal of Inequalities and Applications;
- Journal of Mathematical Analysis and Applications;
- Mathematical Methods in the Applied Sciences;
- Mathematical Problems in Engineering;
- Mathematische Nachrichten;
- Nonlinear Analysis Series A: Theory, Methods & Applications;
- Transactions of the American Mathematical Society.

My research deals mainly with **qualitative properties** of solutions to (possibly non-local, nonlinear and/or degenerate) **elliptic equations**. Aim of the research is to understand the effects of the geometry of the domain on solutions to the Dirichlet problem, taking into account the properties of the equation and the boundary data. Masterpieces in this field are the paper by Gidas, Ni and Nirenberg (1979) and the one by Serrin (1971). I obtained results of symmetry, star-shapedness, convexity, making a refined usage of the maximum principle.

In the past, I investigated the **blow-up at the boundary** for some elliptic equations: I obtained existence and non-existence results, and proved convexity and asymptotic estimates of solutions. I also took into consideration the minimization of some **non-coercive variational integrals**, and proved the existence of a convex minimizer by means of a rearrangement technique.

I currently **teach Mathematical Analysis**, and I also taught Logic and Statistics in the past. Internal lectures to my courses were given by:

- Lucio Boccardo (Sapienza);
- Marco Bramanti (Milan);
- Raffaella Servadei (Urbino).

I have been **advisor** of 20 students of Mathematics (17 graduate students, 3 undergraduate). I also have a role in **popularizing mathematics** at school level.