WAVES, WAVE PACKETS, AND THEIR INTERACTIONS

May 17-22, 2026

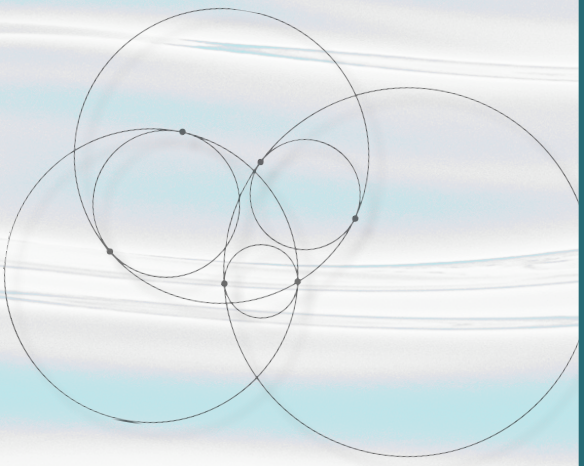
UHLENBECK LECTURE COURSE

What KdV teaches us about waves

Monica Visan | UCLA

In this course, we will use the Korteweg-de Vries equation as a model to understand the behavior of dispersive partial differential equations. Through this lens, we will discuss dispersion, well-posedness, and solitons. We will also discuss the existence of a Lax pair for this equation and how this informs our understanding of the complete integrability of this model.

Prerequisites: Familiarity with measure spaces, convergence theorems, function spaces, and the Fourier transform at the level of a first-year graduate course. A first course on harmonic analysis is recommended.



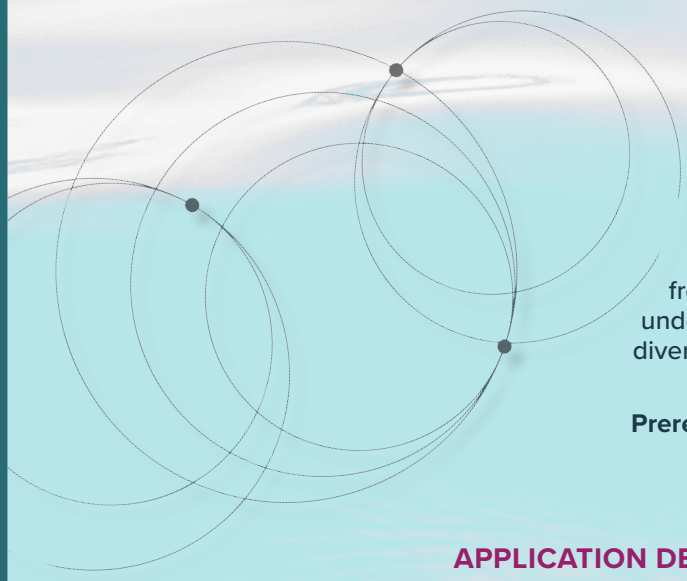
TERNG LECTURE COURSE

From Fourier restriction to number theory, combinatorics, and fractal geometry

Dominique Maldague | Cambridge University and UCLA

Fourier series are classically used to construct solutions to partial differential equations such as the wave and Schrödinger equations. In Fourier restriction theory, additional conditions are imposed on the frequencies of these series, giving rise to a more geometric view of the underlying functions. We will discuss how to use this perspective to study diverse problems, like the distribution of prime numbers, size of arithmetic progressions in sets, and the Kakeya problem in fractal geometry.

Prerequisites: A first course in proof-based analysis is expected. Exposure to Fourier series, Hölder's inequality, and L^p spaces will be helpful.



APPLICATION DEADLINE IS FEBRUARY 6, 2026

For more information, please visit: https://www.ias.edu/math/wam/wam-2026

For any further inquiries, please contact us at wam@ias.edu

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