Columbia Engineering
The Fu Foundation School of Engineering and Applied Science

Distinguished Colloquium in Interdisciplinary & Applied Mathematics

Russel Caflisch
Director, Courant Institute of Mathematical Sciences, New York University

"Signal Fragmentation for Low Frequency Radio Transmission"

Signal fragmentation is a method for transmitting a low frequency signal over a collection of small antennas through a modal expansion (similar to one level of a wavelet expansion), in which the mode has compact support in time. We analyze the spectral leakage and optimality of signal fragmentation. For a special choice of mode, the spectral leakage can be eliminated for sinusoidal signals and minimized for bandlimited or AM signals. We derive the optimal mode for either support size or for energy efficiency.

NYU
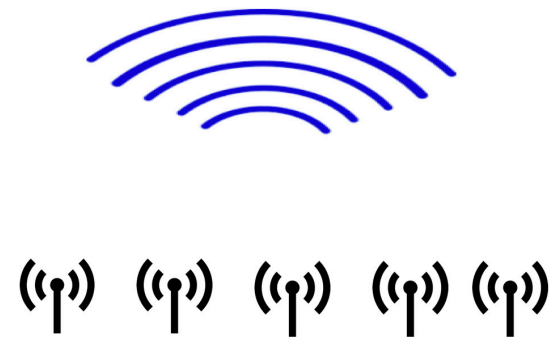
Russel Caflisch is director of the Courant Institute of Mathematical Sciences and Professor in the Mathematics Department at NYU. He has also held faculty positions at Stanford and UCLA, where he was director of the Institute for Pure and Applied Mathematics (IPAM). He is a fellow of the Society for Industrial and Applied Mathematics, the American Mathematical Society, and the American Academy of the Arts and Sciences. His research is on a wide range of topics in applied math, including PDEs, fluid dynamics, plasma physics, materials science, Monte Carlo methods, and computational finance.

Wednesday, November 15, 2017
2:45 pm, 750 CEPSR (Costa Engineering)
530 West 120th Street
(Refreshments in 200 Mudd at 4:00 PM)

Organizing Committee:
Qiang Du (APAM)
Don Goldfarb (IEOR)
Eitan Grinspin (Computer Science / APAM)
Ioannis Karatzas (Mathematics)
Andrei Okounkov (Mathematics)
Michael I. Weinstein (APAM / Mathematics)

http://engineering.columbia.edu/IAM-Colloquium