

SEMINAR SELECTED TOPICS IN MODERN FOURIER ANALYSIS

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Possible Topics.

- (A) *Asymptotic behavior, as $t \rightarrow \infty$ of solutions of Navier-Stokes equations and nonlinear spectral manifolds*, FOIAS & SAUT, Indiana University Mathematics Journal Vol. 33, No. 3 (May-June, 1984), pp. 459-477.
Key words: NSE, long time behavior, energy estimates, bounded domain, torus.
- (B) *A solution formula for the Stokes equation in R_+^n* . UKAI, Communications on Pure and Applied Mathematics, Vol. 40, No. 5 (1987), pp. 0010-3640
Key words: NSE, Green's function, Dirichlet boundary condition.
- (C) *Lower bounds on the mix norm of passive scalars advected by incompressible enstrophy-constrained flows*. IYER, KISELEV, XU, Nonlinearity, Vol. 27, No. 5 (2014).
Key words: Mixing bounds, transport equation, Bressan conjecture, DiPerna Lions theory.
- (D) *Some function spaces defined using the mean oscillation over cubes*. Spanne, Annali della Scuola Normale Superiore di Pisa, Classe di Scienze 3 serie, Vol. 19, No. 4 (1965), p. 593-608.
Key words: Fourth order boundary value problems, regularity, Calderon Zygmund decomposition.
- (E) *Endpoint Strichartz estimates*, Keel, Tao, American Journal of Mathematics, Vol. 120(5), 950–980, 1998.
Keywords: Interpolation between L^p spaces, Schrödinger equation.
- (F) *The sharp bound for the Hilbert transform on weighted Lebesgue spaces in terms of the classical A_p characteristic*, Vol. 129(5), 1355–1375, 2007. PETERMICHL
Keywords: weighted L^p spaces, Haar system, singular integral operators, Bellmann-Function.
- (G) *Carleson's theorem: proof, complements, variations*, Lacey, Michael T., Publicacions Matemàtiques 48 (2), 2004.
See also <https://arxiv.org/abs/math/0307008>.
Keywords: Classical result about convergence of Fourier series.