TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

Monday, October 10, 2022, 2:30 p.m.

Homogenization by compensated compactness

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Abstract: Compensated compactness is an amazing result, originally due to Murat and Tartar, that states that the dot product of two weakly convergent in L^2 sequences of vector fields converges to the dot product of their weak limits, provided one of the sequences is curl-free, and the other is divergence-free. I will show how to generalize this result to a much larger class of differential operators and then use it to prove a homogenization theorem for a large class of elliptic systems of PDEs.

This talk is specifically aimed at graduate students, especially the ones taking Functional Analysis.