

המחלקה למתמטיקה, בן-גוריון

קולוקוויום

ביום שלישי, 20 ביוני, 2017

בשעה 14:30 – 15:30

ב-101 Math

ההרצאה

BBM new a via spaces Besov in detection Jumps type Aviles-Giga to Applications formula. functionals

תינתן על-ידי

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תקציר: Motivated by the formula due to Brezis Bourgain, and Mironescu, the expression that characterizes L^q functions in terms of the Gagliardo-Nirenberg seminorm $\int_{\Omega} \int_{\Omega} \frac{|u(x)-u(y)|^q}{|x-y|^q} \rho_{\varepsilon}(x-y) dx dy = K_{q,N} \|\nabla u\|_{L^q}^q$, respectively, ($q = 1$ for BV and $q > 1$ for $W^{1,q}$) is replaced in the denominator by $|x-y|$ above. This identifies the space BV^q as the space of functions whose Gagliardo-Nirenberg seminorm is finite. We study the relevant spaces $BV^q(\Omega)$ and $W^{1/q,q}(\Omega)$ and show that $BV^q(\Omega) \cap L^{\infty}(\Omega)$ contains $W^{1/q,q}(\Omega)$ and $BV(\Omega) \cap L^{\infty}(\Omega)$ contains $W^{1/q,q}(\Omega)$. We also present applications to singular perturbation problems of Aviles-Giga type.