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Javad Namazi* (namazi@fdu.edu), Madison, NJ 07940. *A Pointwise Convergence and Bessel Capacity.*

Let $1 < p < \infty$, and k and m be positive integers such that $0 \leq (k - 2m)p \leq n$. Let Ω be an open set in R^n . It is shown that there exists a sequence of positive constants c_j such that for every f in the Sobolev space $W^{k,p}(\Omega)$,

$$\lim_{r \rightarrow 0} \frac{1}{r^{2m} |B(x, r)|} \int_{B(x, r)} [f(y) - \sum_{j=0}^{m-1} c_j r^{2j} \Delta^j f(x)] dy = c_m \Delta^m f(x)$$

for all $x \in \Omega$ except on set of zero Bessel capacity. (Received September 09, 2011)