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Monica Torres*, torres@math.purdue.edu. *Normal traces and Gauss-Green formula for weakly differentiable vector fields.*

We obtain the normal trace of bounded divergence measure vector fields on the boundary of any set of finite perimeter E as the limit of the normal traces of the vector field F on smooth surfaces that approximate ∂E essentially from the inside of E with respect to the measure $\operatorname{div} F$. Using this trace, we obtain the corresponding Gauss-Green formula. (Received February 11, 2006)