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Josefina Alvarez and **Maria Cristina Mariani*** (mmariani@nmsu.edu), Department of Mathematical Sciences, New Mexico State University, Las Cruces, NM 88003-8001. *Extensions of the Nemytsky Operator: Distributional Solutions of Nonlinear Problems.*

We develop a methodology for working with solutions of nonlinear differential problems that are signed measures. operator to a class of signed measures. functions of infinite measures, such as the Lebesgue measure. Finally, we use our results to solve an initial value problem with a signed finite measure as initial condition, for a class of nonlinear evolution equations. (Received July 07, 2007)