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Michael S Eydenberg* (mseyden@nmsu.edu), Department of Mathematical Sciences, New Mexico State University, Las Cruces, NM , and **Maria C. Mariani**. *Distribution-Valued Weak Solutions to a Parabolic Differential Equation that Arises in Financial Mathematics*. Preliminary report.

We study solutions to a parabolic differential equation that is based on the Black-Scholes model of option pricing. In particular, we study distribution-valued solutions that are weak in a particular sense. Using the method of continuity, we establish the existence of solutions with values in the dual of $\mathcal{D}(\Omega)$ for sufficiently small domains Ω . We also consider estimates for classical solutions of this equation to determine whether they define distributions on various function spaces. (Received August 21, 2007)