1138-35-319    **Gisèle Ruiz Goldstein** (`ggoldste@memphis.edu`) and **Jerome A. Goldstein\***
(`jgoldste@memphis.edu`), Department of Mathematical Sciences, University of Memphis,
Memphis, TN 38152, and **Michel Pierre** (`michael.pierre@ens-rennes.fr`). *The
Agmon-Douglis-Nirenberg problem for dynamic boundary conditions.*

Of concern are certain reaction-diffusion systems wth total mass bounded in the $L^1$ norm. The solution of this problem requires new results from the study of a heat equation involving a symmetric uniformly elliptic operator on a bounded domain, with Wentzell (or dynamic) boundary conditions incorporating the Laplace-Beltrami operator. We prove that the semigroup governing this linear problem is analytic in the right half plane in $L^p$ for $1 \le p \le \infty$ and for $C$ in the sup norm. The proof is quite long and delicate. We will sketch it. (Received February 12, 2018)