1050-35-14   **Abdelkader Y Boucherif*** (`aboucher@kfupm.edu.sa`), Department of Mathematics and Statistics, KFUPM- Box 5046, Dhahran, Eastern 31261, Saudi Arabia. *Parabolic problems with nonlocal conditions.* Preliminary report.

Let Ω be an open bounded domain in $\mathbb{R}^N$, and $T > 0$. We are concerned with the existence of solutions of the following parabolic problem $u_t + Lu = F(x, t, u)$, $(x, t) \in \Omega \times (0, T)$, $u(x, t) = 0$, $(x, t) \in \partial\Omega \times [0, T]$ subjected to the nonlocal condition $u(x, 0) = \int_0^T g(x, t, u(x, t))dt$, $x \in \Omega$.

We provide sufficient conditions on L, F, g that guarantee the existence of at least one solution. (Received January 02, 2009)