1113-35-297      **Sedar Ngoma\*** (`nzb0015@auburn.edu`), Department of Mathematics and Statistics, 221 Parker Hall, Auburn University, Auburn, AL 36849, and **Dmitry Glotov**, **A. J Meir** and **Willis E Hames**. *An inverse time-dependent source problem for the two dimensional parabolic equation with integral overdetermination.*

An inverse time-dependent source problem for the heat equation in two dimensions with integral overdetermination is considered. Existence and uniqueness of a weak solution of the inverse problem are proved. Numerical studies using the finite element method in space combined with the implicit backward Euler in time are presented and discussed. The errors and convergence rates are also reported. (Received August 25, 2015)