1057-65-352 **Younbae Jun*** (`yjun@uwa.edu`), Department of Mathematics, Station 7, University of West Alabama, Livingston, AL 35470. *An efficient domain decomposition method for three-dimensional parabolic partial differential equations.*

A non-overlapping domain decomposition algorithm to solve three-dimensional parabolic partial differential equations is presented. It has been shown in this paper that the algorithm is unconditionally stable and efficient. Spectral radii for the interface and interior region are provided. Unlike two-dimensional problem, it has been found out that estimating the values of the points of the interface in three-dimensional problem is no longer negligible. (Received January 25, 2010)