

ABSTRACT

Several methods have been proposed for evaluating the performance of parallel processing system with a set of concurrent programs such as the decomposition approximation method, which is applicable only to fixed concurrent programs. Another method, the average concurrency method, determines the average of the overall concurrency. The average concurrency method can be executed on a system with a small memory capacity, and can be executed higher speed. The average concurrency method does not suit the different of contents each vector. It is suitable for a case where the variance of concurrency levels does not deviate much from the average concurrent level.

This thesis emphasizes on solving some problems in Multiple Level Concurrent Program (MLCP). There is a main contribution resultant from this thesis:

- Proposing an effective method for calculating MLCP

The proposed method allows the result of calculation to be close to the simulation result.

The proposed method has two main advantages. First is to provide more accurate result when compiling the calculation with MLCP. Second is this method can be applied to all concurrent programs. However, it should be noted that the main disadvantages of this method are it takes more time to calculate, and it needs more CPU power.