Abstract. A new search algorithm for solving distributed constraint optimization (DCOP) problems is presented. The proposed algorithm performs concurrent search on non intersecting parts of the global search space, using multiple search processes. Each Search Process uses synchronous forward bounding in its sub-space, to prune the remaining search space. Concurrent Forward Bounding (ConcFB) dynamically spawns new Search Processes in parts of the search space which have higher chances to produce tighter bounds on the cost of the global solution.

An extensive experimental evaluation is presented comparing ConcFB to the leading DCOP algorithms. ConcFB significantly outperforms other DCOP algorithms in both run time and communication load.

A new measure of concurrency of computation for DCOP algorithms is introduced the Concurrency Factor (CF). Each feature of ConcFB is shown to increase its concurrency. Unlike other DCOP algorithms, the CF of ConcFB increases with problem density and difficulty.