The Solution of Combinatorial Problems Using SAT

Christian Posthoff\textsuperscript{1}, Bernd Steinbach\textsuperscript{2}

\textsuperscript{1} University of The West Indies, Trinidad & Tobago; 
\textsuperscript{2} Freiberg University of Mining and Technology, Germany

The satisfiability problem (SAT) has been very well explored. Based on very efficient parallel algorithms for its solution, it will be shown that many combinatorial problems can be transformed into satisfiability problems and solved using these developed algorithms. The approach is constructive and very general, no research procedures are involved, and the results are always complete. It can be concluded that the solution algorithms for SAT can be used (in the sense of NP-completeness) for many other combinatorial problems in a very general way.