A Note on Satisfiability Problems

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We investigate the complexity of certain satisfiability problems. CNF-SAT, which we also denote by $\wedge$-$\vee$-SAT, asks for an assignment for a given formula that satisfies *all* of its clauses. While $\wedge$-$\vee$-SAT is NP-complete, we ask:

- what is the complexity of $\oplus$-$\vee$-SAT, where it is asked for an assignment that satisfies an *odd* number of clauses?

We show that $\oplus$-$\vee$-SAT can be solved by a randomized algorithm in polynomial time. The result is extended to $\oplus$-Th-SAT, where we have a threshold instead of an or at the input level.

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