Faster k-SAT algorithms using biased-PPSZ

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Résumé

The PPSZ algorithm, due to Paturi, Pudlak, Saks and Zane, is currently the fastest known algorithm for the k-SAT problem, for every k> 3. For 3-SAT, a tiny improvement over PPSZ was obtained by Hertli. We introduce a biased version of the PPSZ algorithm using which we obtain an improvement over PPSZ for every k> =3. For k=3 we also improve on Herli's result and get a much more noticeable improvement over PPSZ, though still relatively small. In particular, for Unique 3-SAT, we improve the current bound from 1.308ˆn to 1.307ˆn. Joint work with Thomas Dueholm Hansen, Haim Kaplan and Or Zamir

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