

COMPUTATIONAL COMPLEXITY AND GÖDEL'S INCOMPLETENESS THEOREM

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Abstract 70T-E35. GREGORY J. CHAITIN, Mario Bravo 249, Buenos Aires, Argentina. *Computational complexity and Gödel's incompleteness theorem*. Preliminary report.

Given any simply consistent formal theory F of the state complexity $L(S)$ of finite binary sequences S as computed by 3-tape-symbol Turing machines, there exists a natural number $L(F)$ such that $L(S) > n$ is provable in F only if $n < L(F)$. On the other hand, almost all finite binary sequences S satisfy $L(S) > L(F)$. The proof resembles Berry's paradox, not the Epimenides nor Richard paradoxes.

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