▸ YIJIA CHEN, JÖRG FLUM, MORITZ MÜLLER, *Consistency and Optimality.*
Shanghai Jiaotong University, China.
E-mail: `yijia.chen@cs.sjtu.edu.cn`.
Albert-Ludwigs-Universität Freiburg, Germany.
E-mail: `joerg.flum@math.uni-freiburg.de`.
Centre de Recerca Matemtica, Bellaterra (Barcelona), Spain.
E-mail: `mmueller@crm.cat`.

For theories T containing a sufficiently rich part of true arithmetic we characterize T $+ Con_T$, where the sentence Con_T claims the consistency of T, as the minimal extension proving for some algorithm that it decides a given problem Q_0 outside PTIME as fast as any algorithm B with the property that T proves that B decides Q_0. Moreover, we characterize problems with an optimal algorithm in terms of arithmetical theories.