

- ▶ LAURENT BIENVENU AND ROD DOWNEY, *Kolmogorov complexity and Solovay functions*.

Institut für Informatik, Ruprecht-Karls Universität Heidelberg, Germany.

*E-mail:* [laurent.bienvenu@ens-lyon.org](mailto:laurent.bienvenu@ens-lyon.org).

School of Mathematics, Statistics and Operations Research, Victoria University of Wellington, New Zealand.

*E-mail:* [Rod.Downey@ecs.vuw.ac.nz](mailto:Rod.Downey@ecs.vuw.ac.nz).

Solovay [2] proved that there exists a computable upper bound  $f$  of the prefix-free Kolmogorov complexity function  $K$  such that  $f(x) = K(x)$  for infinitely many  $x$ . In this talk, we will consider the slightly more general class of computable functions  $f$  such that  $K(x) \leq f(x) + O(1)$  for all  $x$  and  $f(x) \leq K(x) + O(1)$  for infinitely many  $x$ , which we call Solovay functions. We show that Solovay functions present interesting connections with algorithmic randomness notions such as Martin-Löf randomness and K-triviality.

[1] LAURENT BIENVENU AND ROD DOWNEY, *Kolmogorov complexity and Solovay functions*, **26th International Symposium on Theoretical Aspects of Computer Science, STACS 2009 Proceedings**, (Susanne Albers and Jean-Yves Marion, editors), vol. 09001, Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik, Germany Internationales Begegnungs- und Forschungszentrum fuer Informatik (IBFI), Schloss Dagstuhl, Germany, 2009, pp. 147–158.

[2] ROBERT SOLOVAY, *Draft of a paper (or series of papers) on Chaitin's work*, Unpublished manuscript, 1975.