

- PETER KOEPKE, PHILIP WELCH, *A Generalised Dynamical System, Infinite Time Register Machines and Π_1^1 -Comprehension*.

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We identify a number of theories of strength that of Π_1^1 -Comprehension. In particular: (a) the set of points attracted to the origin in a generalised transfinite dynamical system of any n -dimensional integer torus; (b) the theory asserting that for any Z and n , the halting set H_n^Z of infinite time n -register machine with oracle Z exists.