Connor Ahlbach, Jeremy Usatine, Christiane Frougny, and Nicholas Pippenger

Abstract

We study the problem of addition and subtraction using the Zeckendorf representation of integers. We show that both operations can be performed in linear time; in fact they can be performed by combinational logic networks with linear size and logarithmic depth. The implications of these results for multiplication, division and square-root extraction are also discussed.