Report on a Linearized Ripple Carry Adder

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Linearization

With linearization we want to divide a combinational circuit into two sub-blocks: a non-linear one and a linear one. Linear combinational circuits are entirely made up of XOR gates whereas non-linear circuits are made up of any other gates. In our ideal case the linear block is much bigger, both area wise and on the number of basic elements, than the non-linear part. Moreover in this ideal case the two blocks are simply cascaded so for example the inputs enter into the non-linear block producing some outputs which are then directly fed into the linear block. These two conditions are desired for the final purpose of developing a design flow for reliable circuits with non-reliable components by exploiting linear error correction techniques.