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Simple Autonomous Chaotic Circuits[1] JESSICA PIPER, University of Massachusetts Lowell, J. SPROTT[2], University of Wisconsin — Over the last several decades, numerous electronic circuits exhibiting chaos have been proposed. Non-autonomous circuits with as few as two components have been developed. However, the operation of such circuits relies on the non-ideal behavior of the devices used, and therefore the circuit equations can be quite complex. In this paper, we present two simple autonomous chaotic circuits using only opamps and linear passive components. The circuits each use one opamp as a comparator, to provide a signum nonlinearity. The chaotic behavior is robust, and independent of nonlinearities in the passive components. Moreover, the circuit equations are among the algebraically simplest chaotic systems yet constructed.

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