Summary: Methods for the forward and exact inverse computation of digital data are developed using reversible fully discrete nonlinear evolution equations. Some elementary examples are presented. A special case of the evolution equation presented here reduces to well-known linear feedback shift registers (LFSRs). LFSRs and various nonlinear versions (NLFSRs) have been studied and used in a variety of applications.

MSC:

94A55 Shift register sequences and sequences over finite alphabets in information and communication theory
39A05 General theory of difference equations

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