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(54) Title: MATRIX SKETCHING USING ANALOG CROSSBAR ARCHITECTURES

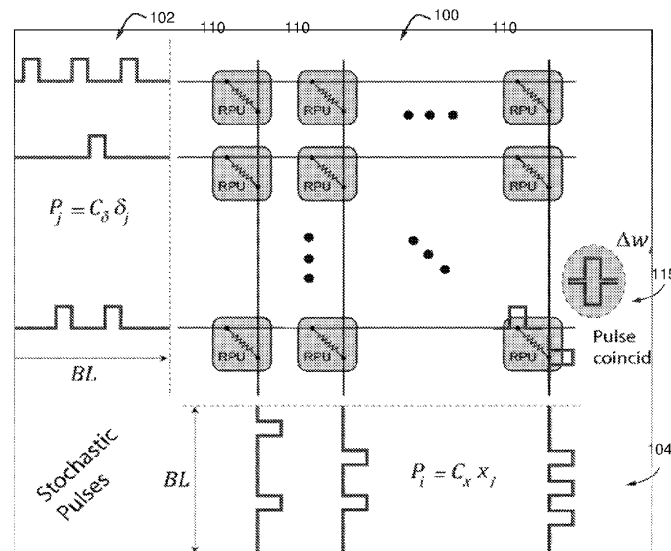


FIG. 1

(57) **Abstract:** A computer-implemented method is presented for performing matrix sketching by employing an analog crossbar architecture. The method includes low rank updating a first matrix for a first period of time, copying the first matrix into a dynamic correction computing device, switching to a second matrix to low rank update the second matrix for a second period of time, as the second matrix is low rank updated, feeding the first matrix with first stochastic pulses to reset the first matrix back to a first matrix symmetry point, copying the second matrix into the dynamic correction computing device, switching back to the first matrix to low rank update the first matrix for a third period of time, and as the first matrix is low rank updated, feeding the second matrix with second stochastic pulses to reset the second matrix back to a second matrix symmetry point.

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