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# Algorithm based on 2-bit adaptive delta modulation and fractional linear prediction for Gaussian source coding

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**Abstract**

A novel 2-bit adaptive delta modulation (ADM) algorithm is presented based on uniform scalar quantization and fractional linear prediction (FLP) for encoding the signals modelled by a Gaussian probability density function. The study focusses on two major areas: realization of a 2-bit adaptive quantizer based on Q-function approximation that significantly facilitates quantizer design; and implementation of a recently introduced FLP approach with the memory of two samples, which replaces the first-order linear prediction used in standard ADM algorithms and enables improved performance without