Block floating point for radar data

Block floating point for radar data

Integer, floating point, and block floating point (BFP) data formats are analyzed and compared in order to establish the mathematical tools for selection of an optimal format which fulfils the demands of high resolution radar (SAR) data to large dynamic range and adequate S/N. The analysis takes quantization noise and saturation distortion into account and concludes that it is preferred to use small blocks and a (new) modified BFP format applying fractional exponents. Data from the EMISAR radar system are applied to illustrate the merits of the different schemes.