A Method of a Spread-Spectrum Radar Polyphase Code Design

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References:
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Abstract:
In this paper, a new method of pulse compression polyphase code synthesis based on the aperiodic autocorrelation function properties and the assumption of coherent processing in the radar receiver is presented. Properties of the proposed code, including spectrum, ambiguity function, precompression bandlimiting effects, and the noise/clutter influence are analyzed. The main features of the synthesized code are the absence of sidelobes in the compressed pulse and its tolerance of precompression bandlimiting limitations. The comparison to the known classes of pulse compression codes is made.

Keywords:
Spread Spectrum, Polyphase Code