Using GAs to Obtain an Optimal Set of Codes for an Ultrasonic Local Positioning System (2007)

Abstract:Signal coding and pulse compression techniques have been recently introduced in Local Positioning Systems as a means to enhance the measurement precision of these systems and to increase their operation frequency. This work presents a Genetic Algorithm that performs the search for an optimal family of binary codes, to be used in a system based on ultrasonic technology. The developed algorithm takes into account the transduction effect of the emitters on the correlation properties of the modulated family to obtain a set of codes that exhibits a superior performance than other families previously used.