Abstracts

Feasibility study on beam-forming technique with 1-D mechanical beam steering antenna using niching genetic algorithm

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Recently, mechanical beam steering microstrip patch array antenna was fabricated using MEMS technology, and its pattern measured by experiment. As one of its applications, the authors propose a new beam-forming method without phase shifters. Based on the radiation pattern of the element antenna, niching genetic algorithm adopting restricted competition selection (RCS) is used for the optimal synthesis of the desired radiation pattern. The proposed method successfully generates the desired beam pattern by controlling the current and angle of the element antenna.

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