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Abstract:

As wireless systems gain wider acceptance and enjoy increased application, performance and cost constraints on the wireless system antennas become more difficult to meet. In this context, antennas that are small in size, inexpensive to manufacture, conformal or are low-profile and that exhibit broadband or dual-band operation are of particular interest. In this paper we apply an optimization technique for multi-short PIFA antennas based on combining a genetic algorithm (GA) and method of moments (MoM) technique. The GA optimizes the position of shorting patches in antenna model together with the shape of the radiator itself, in order to obtain a specific frequency response. Recalculation of the MoM interaction matrix for each individual in the GA is avoided by application of DMM (direct matrix manipulation).