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From Engineering Electromagnetics to Electromagnetic Engineering: Using Computational Electromagnetics for Synthesis Problems

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Abstract: In this paper, a two-stage approach is proposed for using computational electromagnetics in antenna engineering. First, stochastic optimization techniques are used in combination with approximate models. Second, line-search techniques are combined with full-wave modeling. For the first stage, we show an illustrative example. The second stage is considered in detail; both the acceleration of the underlying field computations and the implementation of the optimization are discussed.

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