Why Gaussian and Cauchy Functions Are Efficient in Filled Function Method: A Possible Explanation

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One of the main problems of optimization algorithms is that they end up in a local optimum. It is therefore necessary to make sure that the algorithm gets out of the local optimum and eventually reaches the global optimum. One of the promising methods to leave the local optimum is the filled function method. It turns out that empirically, the best smoothing functions to use in this method are the Gaussian and the Cauchy functions. In this talk, we provide a possible theoretical explanation for this empirical result.