

DOE in Recent Technology Development

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Computer simulation plays an important role in recent technology development, in particular exploration of new methodology, examination of developed technologies and so forth. Design of experiments is helpful for application of computer simulation because it is a series of techniques to perform experiments efficiently and the above exploration and examination requires experimental results of simulation. This talk discusses an application of design of experiments to computer simulation as a grammar of design of experiments in computer simulation that is helpful technology development. Specifically, a grammar shown in this paper includes techniques for validating a tentative model of response and factors, screening many factors to identify some active factors and approximating the response function by some active factors. Traditional approaches of design of experiments are useful for these required are as partially. However, some of them are not solved by the traditional approaches because of the complexity coming from computer simulation. Therefore, this paper also shows a new approach to solve these problems.

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