



Improving System Reliability Using the Saber® Simulator in a Robust Design Flow

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Nominal Design

As a design engineer, you are often faced with the challenge of creating a design that meets the requirements of a customer or client. One of the most common methods for creating a design is nominal design. This method involves creating a design that is based on a set of nominal values for the various parameters of the design. For example, you might create a design for a shaft that is based on a nominal diameter of 1.000 inches. This design would then be used to create a set of manufacturing drawings that specify the dimensions of the shaft.

One of the advantages of nominal design is that it is relatively simple and easy to understand. It also allows you to create a design that is based on a set of standard values, which can make it easier to manufacture. However, nominal design does have some limitations. For example, it does not take into account the variability of the manufacturing process, which can result in a design that does not meet the requirements of the customer or client.

Sensitivity Analysis

As a design engineer, you are often faced with the challenge of creating a design that meets the requirements of a customer or client. One of the most common methods for creating a design is sensitivity analysis. This method involves creating a design that is based on a set of nominal values for the various parameters of the design. For example, you might create a design for a shaft that is based on a nominal diameter of 1.000 inches. This design would then be used to create a set of manufacturing drawings that specify the dimensions of the shaft.

One of the advantages of sensitivity analysis is that it allows you to identify the parameters of the design that have the greatest impact on the performance of the design. This information can be used to create a design that is more robust and less sensitive to manufacturing variability. However, sensitivity analysis can be a complex and time-consuming process, and it may not be suitable for all designs.

Parametric Analysis

As a design engineer, you are often faced with the challenge of creating a design that meets the requirements of a customer or client. One of the most common methods for creating a design is parametric analysis. This method involves creating a design that is based on a set of nominal values for the various parameters of the design. For example, you might create a design for a shaft that is based on a nominal diameter of 1.000 inches. This design would then be used to create a set of manufacturing drawings that specify the dimensions of the shaft.

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Statistical Analysis

As a design engineer, you are often faced with the challenge of creating a design that meets the requirements of a customer or client. One of the most common methods for creating a design is statistical analysis. This method involves creating a design that is based on a set of nominal values for the various parameters of the design. For example, you might create a design for a shaft that is based on a nominal diameter of 1.000 inches. This design would then be used to create a set of manufacturing drawings that specify the dimensions of the shaft.

