

## Hierarchical Modeling Using GLMs to Improve Yield

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In a complex manufacturing environment such as semiconductor manufacturing, there are hundreds of interrelated processes. In such an environment, modeling the impact of critical process parameters on final performance metrics such as defectivity or yield is a challenging task. Issues such as low number of observations compared to process variables, difficulty in formulating a high dimensional design matrix, and missing data due to failures pose serious challenges in using empirical modeling techniques. Our approach is to use generalized linear modeling in a hierarchy to understand the impact of key process and subprocess variables on the system output. This talk will discuss GLM modeling and issues such as bias and variance estimation.