



THE UNIVERSITY OF
CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

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A Temporal Decomposition Framework for Modeling and
Simulation of Production Cost Models

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Jones 304, 5747 S. Ellis Avenue

ABSTRACT

We present a statistical approach for modeling hourly demand data with weekly horizons with the purpose of using it in production cost models. We use a technique based on segmenting the target horizon (a year or more) in equal time intervals followed by a principal component analysis reduction and mapping. In the new coordinates, the vast majority of the resulting features can be well modeled by normal distributions. This approach can also be used with covariates, which in turn result in the ability to create new meaningful scenarios when changing these covariates (such as temperature). We analyze the benefit of using this approach in conjunction with a probabilistic interpretation of production cost models.

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