Conveyor Belt Wear Forecasting through a Bayesian Hierarchical Modeling Framework using Functional Data Analysis and Gamma Processes by Ryan Leadbetter

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Theme 2

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Reliability engineers make critical decisions about when and how to maintain conveyor belts, decisions that can significantly impact the production of the mine. The engineers use thickness measurements across the belt's width to justify these decisions.

However, the current approaches to forecast the wear of the conveyor belts are naive and throw away valuable information about the special wear characteristics of the conveyor. We have developed a new method for forecasting belt wear that retains the wear profile's spatial structure and considers the wear rate's heterogeneity - caused by operation and ore body composition variations.