

第 30 回フロンティア材料研究所講演会

Special lecture on

Building Stock Dynamics by Survivor Analysis

(建築構造物の生存解析)

Prof. David Mukai, Univ. of Wyoming

(Visiting scholar of Institute of Innovative Research at Tokyo Institute of Technology)

Time and Date: 15:30—17:00, February 10th (Friday), 2017

(2017 年 2 月 10 日 15:30—17:00)

Place: Meeting Room2, 2F of Suzukake Hall (すずかけホール 2 階, 集会室 2)

Summary

This work demonstrates the application of survival analysis in building stock dynamics research. Survival analysis is widely used in wildlife biology studies and pharmaceutical research. The objective of this work is to demonstrate the feasibility of survival analysis, which involves investigating the timespan in which a building is "alive," identifying "causes of death," and identifying variables affecting building "mortality." These methods are applied to data from building stocks in St. Paul, Minnesota, and Laramie, Wyoming.

Conclusions from this work are:

- Collecting building lifespan data is difficult.
- The major causes for building "death" (demolition) in the St. Paul building stock were redevelopment, not suitable for anticipated use, and later in life the building's physical condition.
- Cox models can identify covariates that affect building mortality.
- Balanced Acceptance Sampling can be used to randomly sample buildings in a region, and interaction with GIS software is seamless.

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