IM3 INTEGRATED MULTISECTOR MULTISCALE MODELING



How Predictable is Urban Form Using Landscape Patterns? Associating Building Morphology with Land Use, Zoning and Population

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Building Morphology Distribution Land Model (BMDLM)

Developed to determine how well building morphology can be predicted using land use (e.g. zoning) and population data at different resolutions

Research Objectives

1. **C**odify the dependency of urban form on population and subsequently zoning

   Due to previous studies correlating population with impervious surfaces

2. How data resolution of building morphologies influences this relationship

Knowledge Gaps

This research is supported by the U.S. Department of Energy, Office of Science, as part of research in MultiSector Dynamics, Earth and Environmental System Modeling Program

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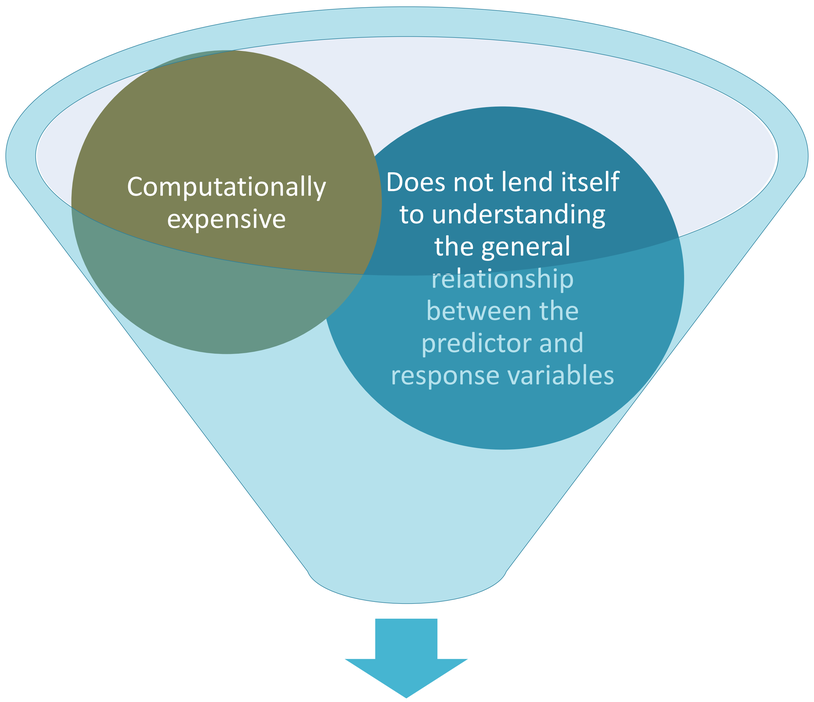
Research Challenges



BMDLM was developed to overcome these limitations as a model displaying distributions of morphological features

Key Research Message

If a more refined resolution is needed, downscaling can be applied

BMDLM offers a distribution product, as opposed to site-by-site measurements

Reliable relationship through the
1) Exploration of alternative measurement of response variables,
2) Varying resolutions,
3) Differing areas of study

Cross-Program Collaborations/ Research Opportunities

IM3 Experiment B - Water

IM3 Experiment C - Energy Infrastructure

ICOM - Climate Change

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