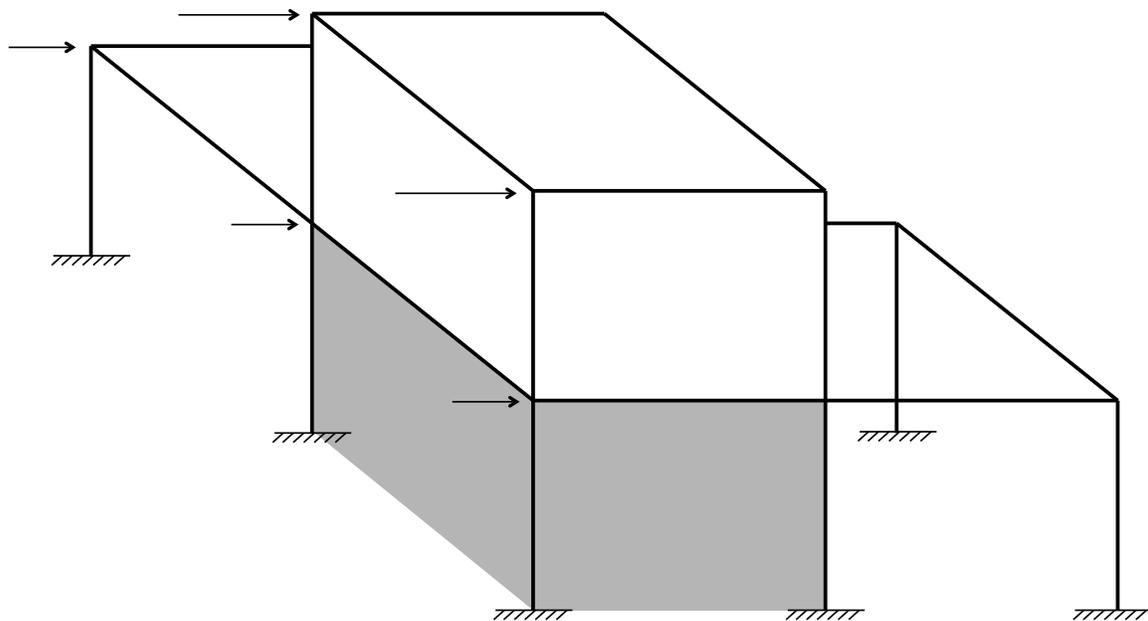


## Reliability Analysis with Multiple Probabilistic Models

Consider a multi-model problem with the following models:

- One earthquake magnitude model
- One earthquake fault line model
- One attenuation model for site-specific earthquake intensity
- Two “damage curve” models for rough assessment of damage to one building in Victoria and one building in Vancouver
- Two repair cost models, corresponding to the two damage models
- One detailed structural model in ***St***, as shown below, of a building in Vancouver
- Two algebraic expressions to evaluate the load at different locations of the ***St*** structural model
- One model that transforms displacement responses from ***St*** to damage
- One model that transforms the damage from the ***St***-structure to repair cost



Given uncertainties in the hazard, structural performance, and repair costs, compute the probability density function of the total loss by creating a histogram in ***Rt***. Also, compute the probability of exceeding specific loss thresholds by utilizing FORM.

