Structural Approach for Building Reconstruction from a Single DSM

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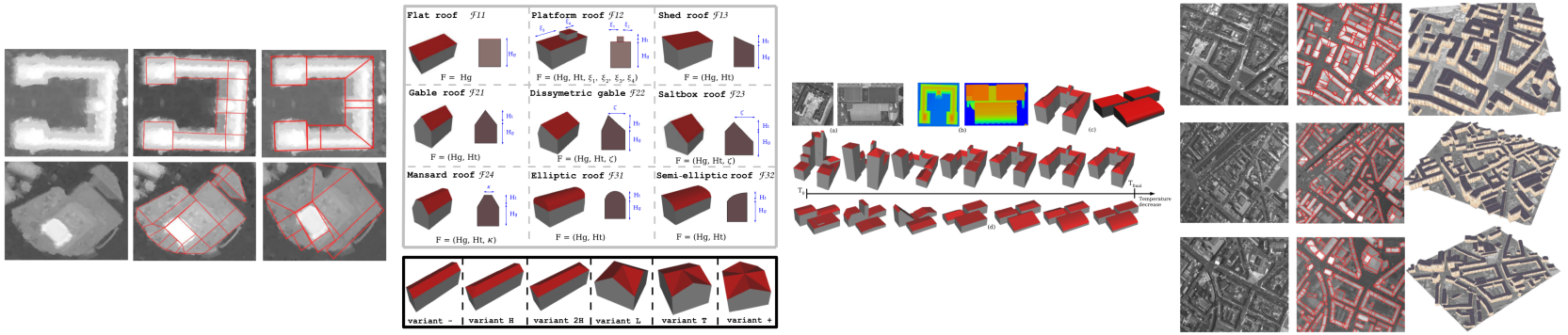

- 3D reconstruction of complex buildings and dense urban areas from a single Digital Surface Model (DSM)
- Buildings as an assemblage of simple urban structures extracted from a library of 3D parametric blocks (like Lego pieces)
- Steps:
  - Extraction of 2D-supports of the urban structures (interactively or automatically)
  - 3D-blocks are positioned on the 2D-supports using a Gibbs model
  - MCMC sampler to find the optimal configuration of 3D-blocks associated with original proposition kernels
- Validated in a wide resolution interval such as 0.7 m satellite and 0.1 m aerial DSMs