A procedural modelling approach for automatic generation of LoD building models

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In this paper we propose a procedural-based modeling system for building generation that can be automatically structured into different levels of detail (LoD). Starting from a ruleset-based model, the user can decide the level of specification to represent the model. This specification is described through a semantic combination using tags associated with the rules. As a result, we can obtain multiple representations of the same building model, each one having the appropriate accuracy for the required analysis task, in a flexible and automatic way. By giving meaning to the architectural element structures we allow the possibility to export the model to a standard format, as for example City Geography Markup Language (CityGML), appropriately designed to unify urban models at different levels of detail.

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