

## **Toward A Formal Model of Topographic Eminences**

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There is a great need for understanding not only how human beings perceive and interact directly with the landscape, but how we reason about and search for information about the landscape in this digital age. Any theory of landform cognition requires us to negotiate thorny questions about the status of landform types, similarity of landform types to other mental categories, properties of landforms, the relationship between landform types and instances, etc. The paper will identify six key ideas that should guide development of ontologies and/or data models for representing people's naïve concepts regarding landscape elements. The author's research focuses on topographic eminences, which form a fundamental superordinate category of landforms, and includes all convex shaped topographic landforms that rise above their immediate surroundings. Therefore, the paper will present a preliminary conceptual model exemplifying the key elements of a data model for topographic eminences. A set of entity definitions and rules will also be proposed that will make explicit the distinction between a simple and complex eminence, and the mereotopological properties that characterize the relationships between the fundamental (partonomic) constituents of eminences. Finally, the paper will briefly discuss the utility of this research to the grander effort of designing geospatial ontologies for feature based terrain reasoning and information retrieval systems.