

## Site Selection and Construction Mechanism of the Island Settlements in China Based on CFD-GIS Technology

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**Abstract :** The efficiency of natural ventilation, wind pressure distribution on building surface, wind comfort for pedestrians and buildings' wind tolerance in traditional settlements are closely related to the pattern of terrain. On the basis of field research on the typical island terrain in China, the physical and mathematical models are established by using CFD software, and then the simulation results of the wind field are exported. We discuss the relationship between wind direction and wind field results. Furthermore simulation results are imported into ArcGIS platform. The evaluation model of island site selection is established with considering slope factor. We realize the visual model of site selection on complex island terrain. The multi-plans of certain residential are discussed based on wind simulation; at last the optimal project is selected. Results can provide the theory guidance for settlement planning and construction in China's traditional island.

**Keywords :** CFD, island terrain, site selection, construction mechanism

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