

## Spatial Analysis for Wind Risk Index Assessment

**Authors :** Ljiljana Seric, Vladimir Divic, Marin Bugaric

**Abstract :** This paper presents methodology for spatial analysis of GIS data that is used for assessing the microlocation risk index from potential damages of high winds. The analysis is performed on freely available GIS data comprising information about wind load, terrain cover and topography of the area. The methodology utilizes the legislation of Eurocode norms for determination of wind load of buildings and constructions. The core of the methodology is adoption of the wind load parameters related to location on geographical spatial grid. Presented work is a part of the Wind Risk Project, supported by the European Commission under the Civil Protection Financial Instrument of the European Union (ECHO). The partners involved in Wind Risk project performed Wind Risk assessment and proposed action plan for three European countries - Slovenia, Croatia and Germany. The proposed method is implemented in GRASS GIS open source GIS software and demonstrated for Case study area of wider area of Split, Croatia. Obtained Wind Risk Index is visualized and correlated with critical infrastructures like buildings, roads and power lines. The results show good correlation between high Wind Risk Index with recent incidents related to wind.

**Keywords :** Eurocode norms, GIS, spatial analysis, wind distribution, wind risk

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