

A quantitative analysis of risk based on climatic factors on the roads in Iran

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ABSTRACT

Climatic factors such as rain, snow, strong winds and icy roads are largely responsible for road accidents in various periods of the year and in various parts of the world. This study first examines the frequency of these factors in Iran. Then, using a quantitative method of risk analysis, the study identifies the potential for the climatic risk affecting road safety and then prepares risk maps in the GIS environment in various months of the year for the whole country. A study of risk maps shows that the months of the year may be divided into two periods in terms of accidents potential: a) April to October, when the roads face small or moderate numbers of accidents. In this period, strong winds play an important role in road accidents especially in windswept regions. b) November to March, when the potential for road accidents gradually increases, reaching its peak in January. In this period, snow, rain and icy roads are the most important causes of accidents especially on mountainous roads.