High space resolution atmospheric simulation of severe regional precipitation and vehicle strain mode

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Under the weakly synoptic scale weather conditions, local thunder showers often occur in the afternoon in Taiwan during summer. Due to the characteristics of small range and heavy rainfall intensity (often exceeding 130 mm hr-1) during precipitation, flooding disasters are often caused and severe precipitation will make vehicles unable to drive on the roads normally, and traffic will be greatly affected. This study uses the WRF 3.9.1 model to simulate a severe precipitation potential area under the design of a two nesting domain with a horizontal spatial resolution of 1 km. We hope that by knowing the possible areas of precipitation, we will study the feasibility of reminding drivers of the degree of flooding after installing water level sensors and buzzers on cars from the perspective of disaster reduction. Airbags are added to the chassis of the vehicle to allow the vehicle to float on the water and reach the car body balance by itself. In addition, the paddles that can be automatically ejected on the wheels are used to enable the driver to control the direction of the water and allow the driver to safely cross the flooded area. This research is not only used for ordinary people's livelihood, it gives ordinary people more chances of survival and prolongs rescue time. In addition, it can also be applied to national defense technology.

Keywords: Severe precipitation, Water level sensor

