



## The enhancement of vertical wind shear by tall mountains in convective storm environments

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Idealized simulations with Cloud Model 1 (CM1) are conducted to investigate the impact of steep mountains on low-level winds, which may result in more favourable environmental conditions for severe storms by locally enhancing the vertical wind shear. Our experiments include both dry simulations as well as moist simulations initialized with moderate CAPE and deep-layer shear marginally supportive of severe storms in the environment far from the mountains. The storm environment is enhanced within a narrow corridor upwind of the mountains. This effect has the potential to partially explain the origins of some so-called “supercell alleys” in parts of Europe, where high mountain ranges are present near a warm body of water, such as along the northern Mediterranean coast.