MODELING OF THE FOEHN EFFECT IN THE NORTH COAST OFF COLOMBIA, SOUTH AMERICA.

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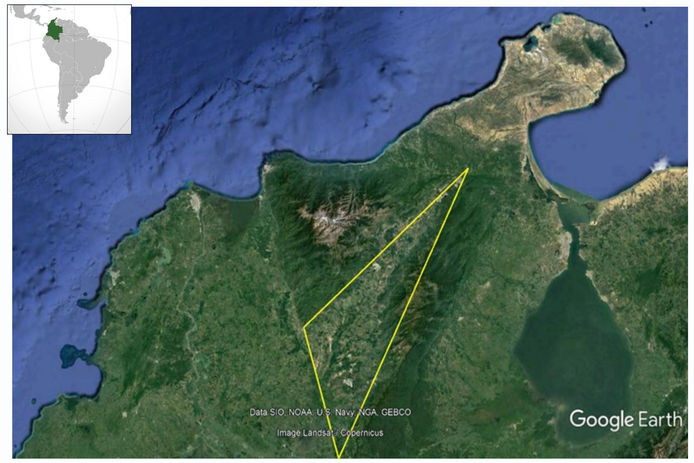
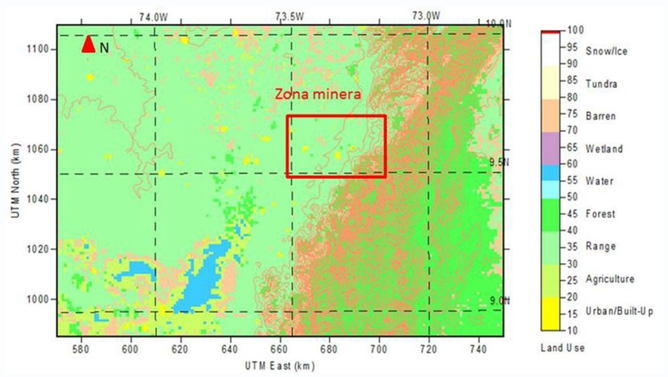
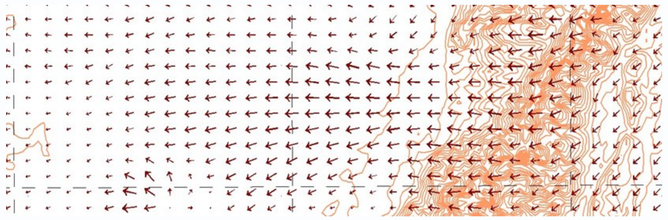
The presence of variations in the topography affect the near-surface wind components, in some cases the wind is forced to ascend over the topographic and surpass it causing what is known as Foehn effect. The WRF model calculates the winds components that are conditioned in this effect by the height of the terrain and the atmospheric stability. This study is applied In the north off the Colombia country where is located a branch of the Andes Mountains (Perija mountain chain) with a maximum height of 2400 meters together with the Mountain formation of Santa Marta, this has a maximum height of 4850 meters.



The orography, in general, is a factor that influences considerably in the speeds that the air takes in its displacement. Mountain chains, such as the Andes mountains, in this case the Perija mountain chain, which opposes the flow of the Northeast winds, is a natural physical barrier that alters the flow of air currents across the mountain ranges and according to their orientation or physiographic acci-





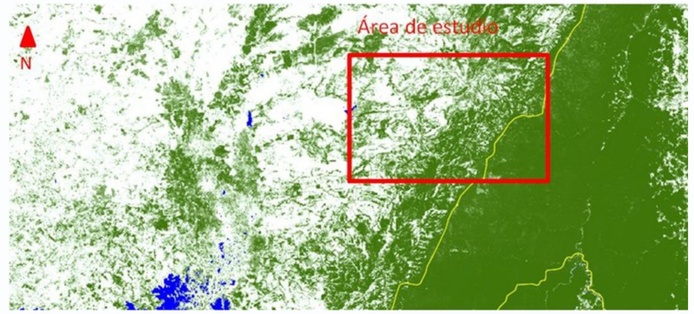
Methodology

In this study modeling the WRF in the year of 2014 for the resolutions de 3 y 9 km. The Foehn effect was most intense in the months of January, February and March, when the Alisios winds in the northern hemisphere blow with greater intensity.

Conclusion

For the month of the January, February and March the wids simulated with the model wRF showed a great tendency to surpass the Andes countains causing The Foeh effect in the Valley of the river Cesar.

Dry conditions in the Valley lead to increased the concentations of PM10. product of mining activities.



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Análisis detallado del efecto foehn generado por la cordillera Oriental en el alto Magdalena (Huila y Tolima) Guillermo Eduardo Armenta Porras. 2013