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Mesoscale modelling of the effect of the water level changes in the Poopo Lake on the Bolivian Altiplano

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Lake Poopo is located at 3.686 meters above sea level. Lake Poopo is a shallow lake and many studies demostrated that its surface is very affected by the hydrologic recharge. In the last decade, the change in the water levels has been reported. As a result of the high altitude of the Bolivian Altiplano, the effect of the heat and mass transfer from lakes to the atmosphere is essential on the climate. In this present study, mesoscale simulations are performed to investigate the effect of the changes in the water level of the Lake Poopo on the mesoscale circulations of the Bolivian Altiplano, including its effect on the regional wind energy potential. Simulations are performed for different seasonal conditions with the open source mesoscale code, the Weather Research and Forecasting (WRF) model.