Introduction: Long-term RCE simulation can accumulate the effects of convectively generated gravity waves on the lower stratosphere and oscillate the wind field. We used the three-dimensional vector-vorticity equation cloud-resolving model (VVM) with long domain size (1024 km × 32 km × 26 km) and high spatial resolution (2 km × 2 km × 200 m) to run a 755-day long simulation. Through the well convective variability of model, we can analyze the interaction between zonal wind oscillation from the lower stratosphere and different structure of convection.