



A simplified version of quasi-geostrophic flow past a mesoscale mountain

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An analytic linear model is presented for idealized orographically blocked flow at moderate Rossby number. Expressions are derived for wind speed at the edges of the mountain and for vertical velocity on each side of the mountain wake. On the left side of the wake (facing downstream) there is ascending motion, while on the right hand side, there is descending motion. The results are illustrated with examples of flow past Iceland and precipitation observations.