

# How does topography impact hydrology at large scales?

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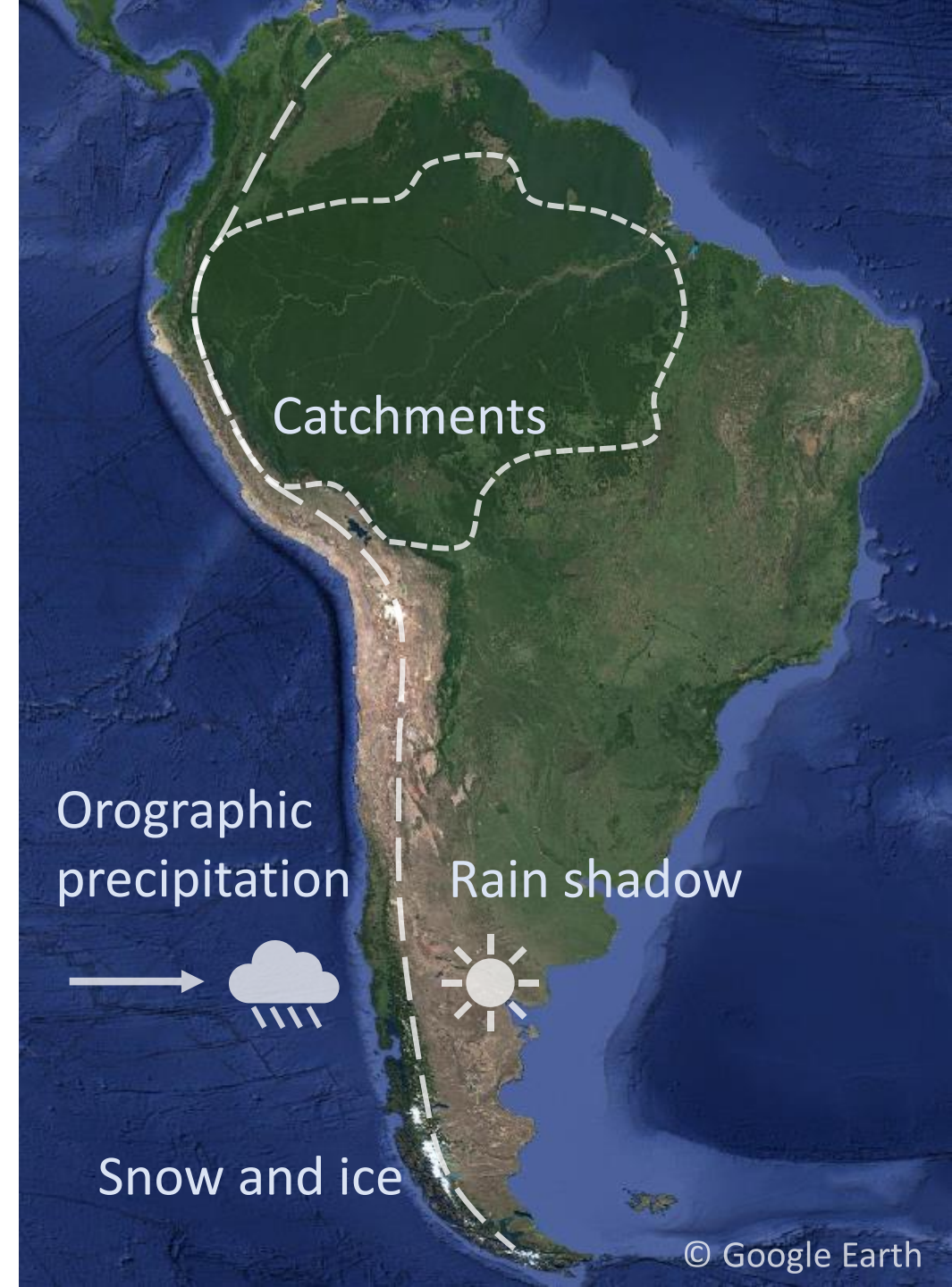
**Tom Gleeson<sup>3</sup>**

**Thorsten Wagener<sup>1</sup>**

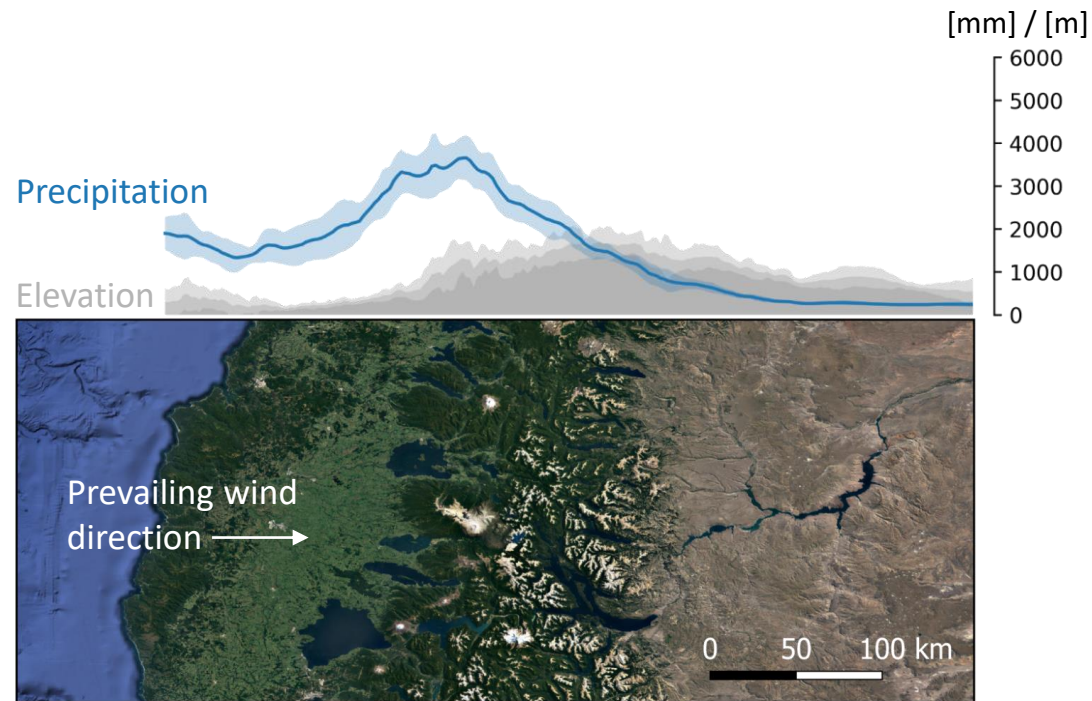
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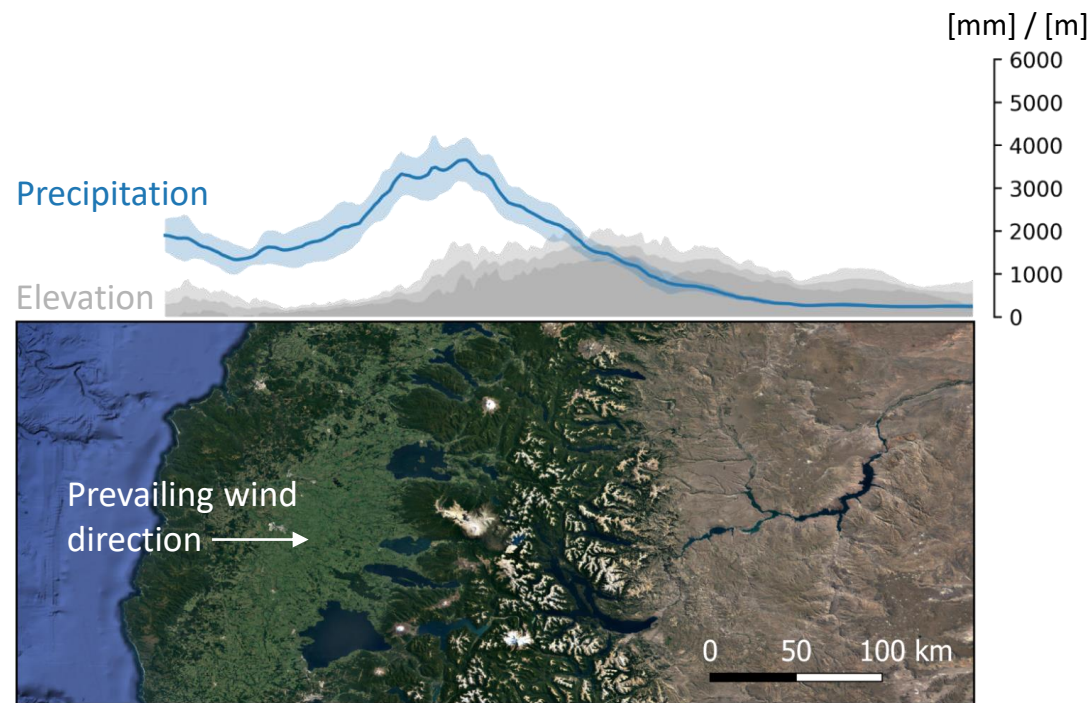


# In many places precipitation increases with elevation

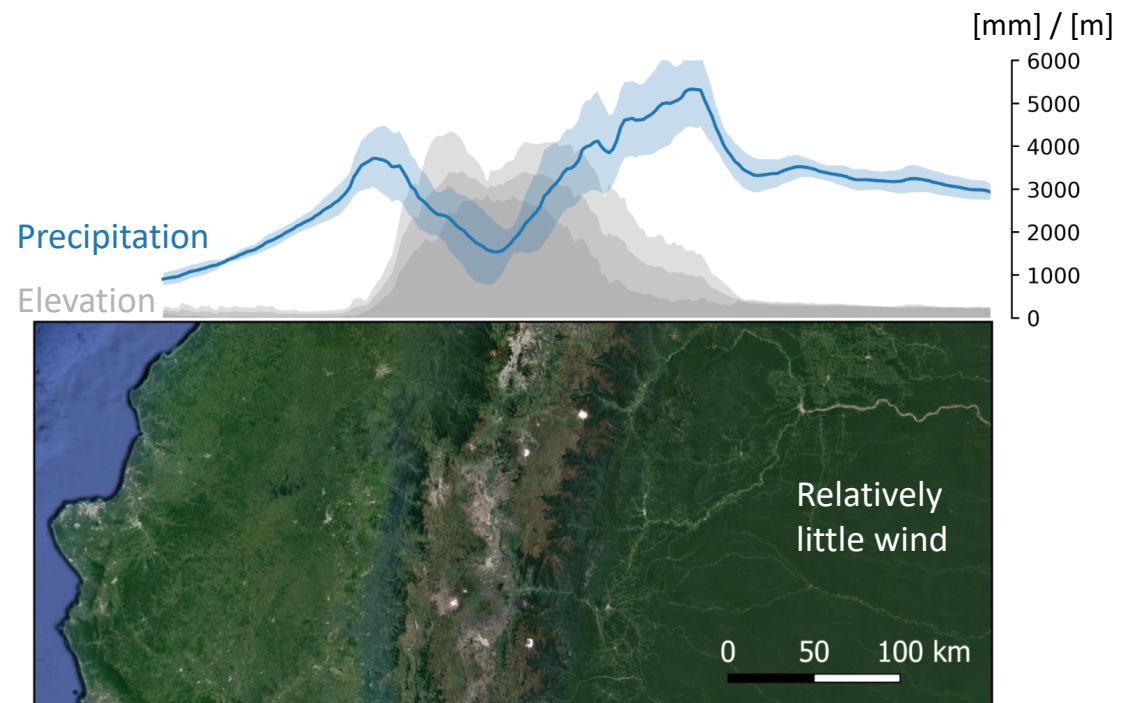


Southern Andes (mid-latitudes)

In many places precipitation increases with elevation,  
but this pattern is not universal.



Southern Andes (mid-latitudes)



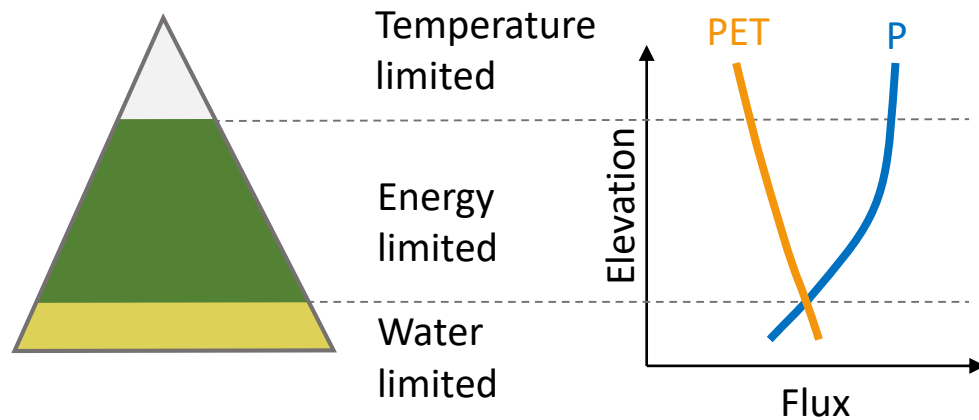
Tropical Andes (tropics)



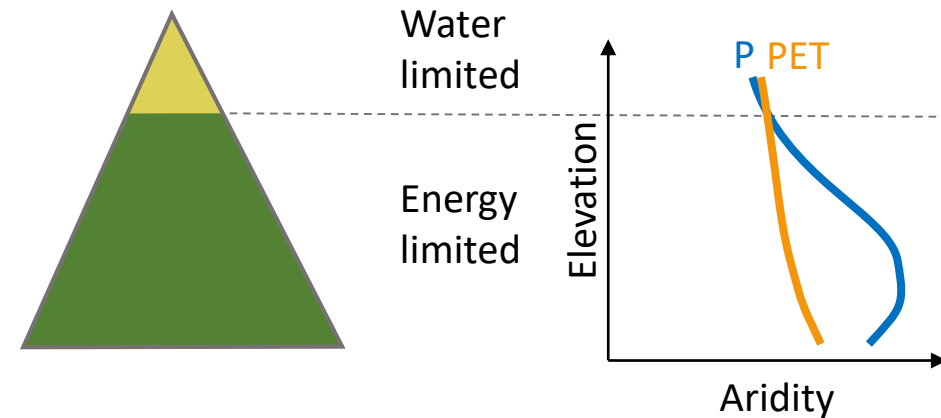


# The climatic water balance shows typical patterns in temperate and tropical regions

## Mid-latitudes

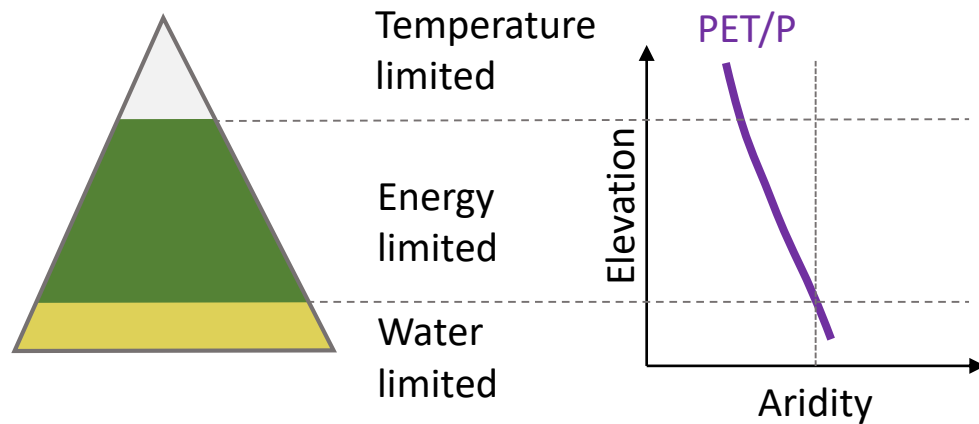


## Tropics

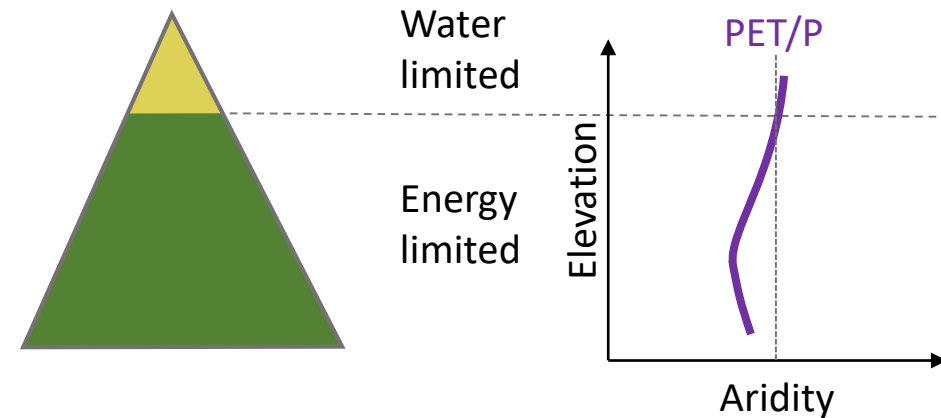


# The climatic water balance shows typical patterns in temperate and tropical regions

## Mid-latitudes



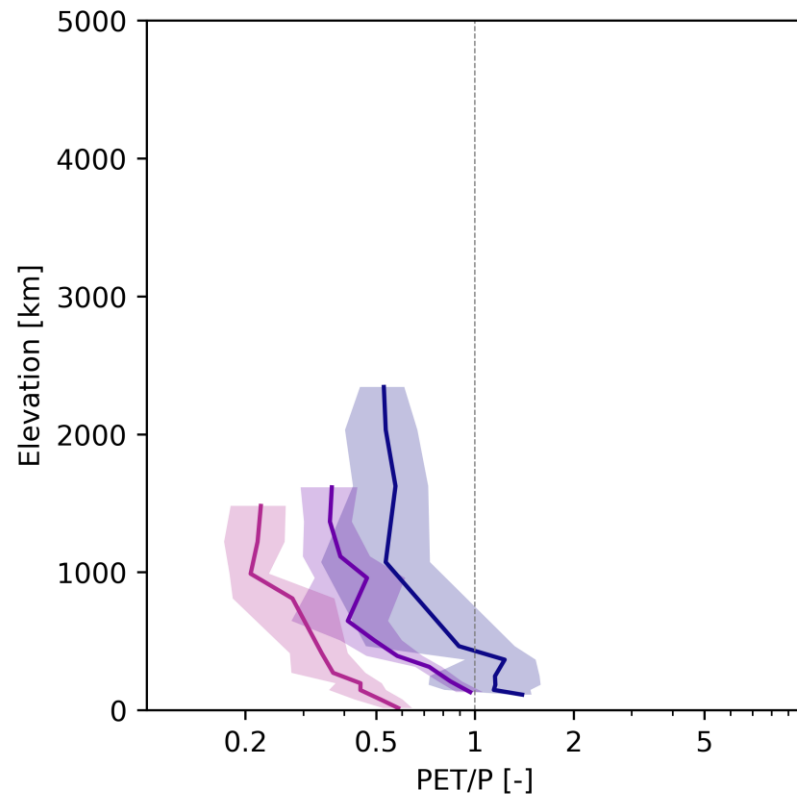
## Tropics



In the same mountain range, aridity-elevation profiles show similar patterns but different magnitudes

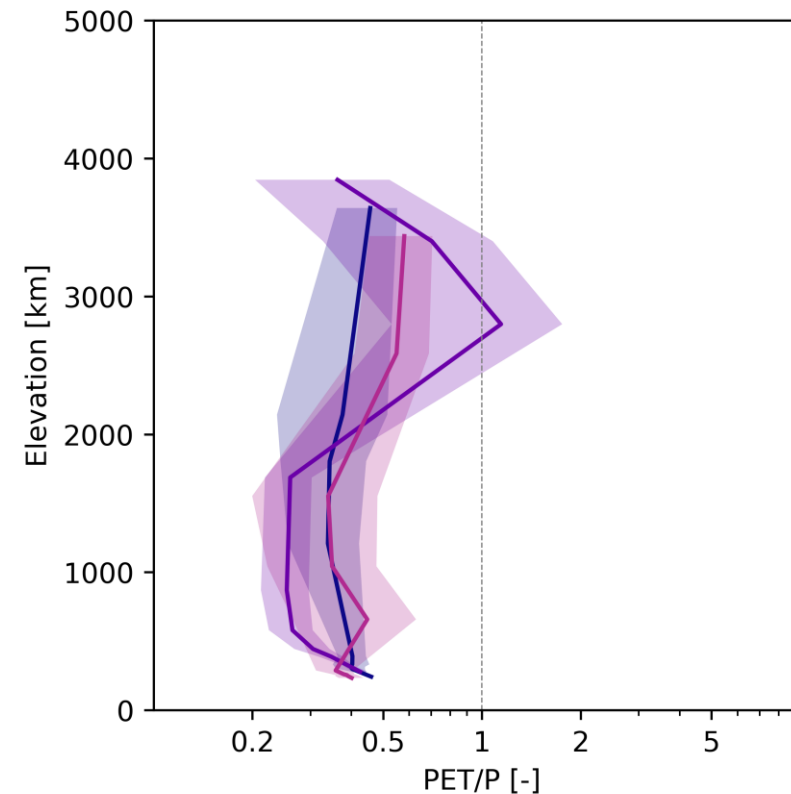
## Mid-latitudes

### Chilean Andes



## Tropics

### Ecuadorian Andes



Topography affects the climatic water balance, but does so differently in different regions.

There's much beyond the climatic water balance, and we should bring together what we know!

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