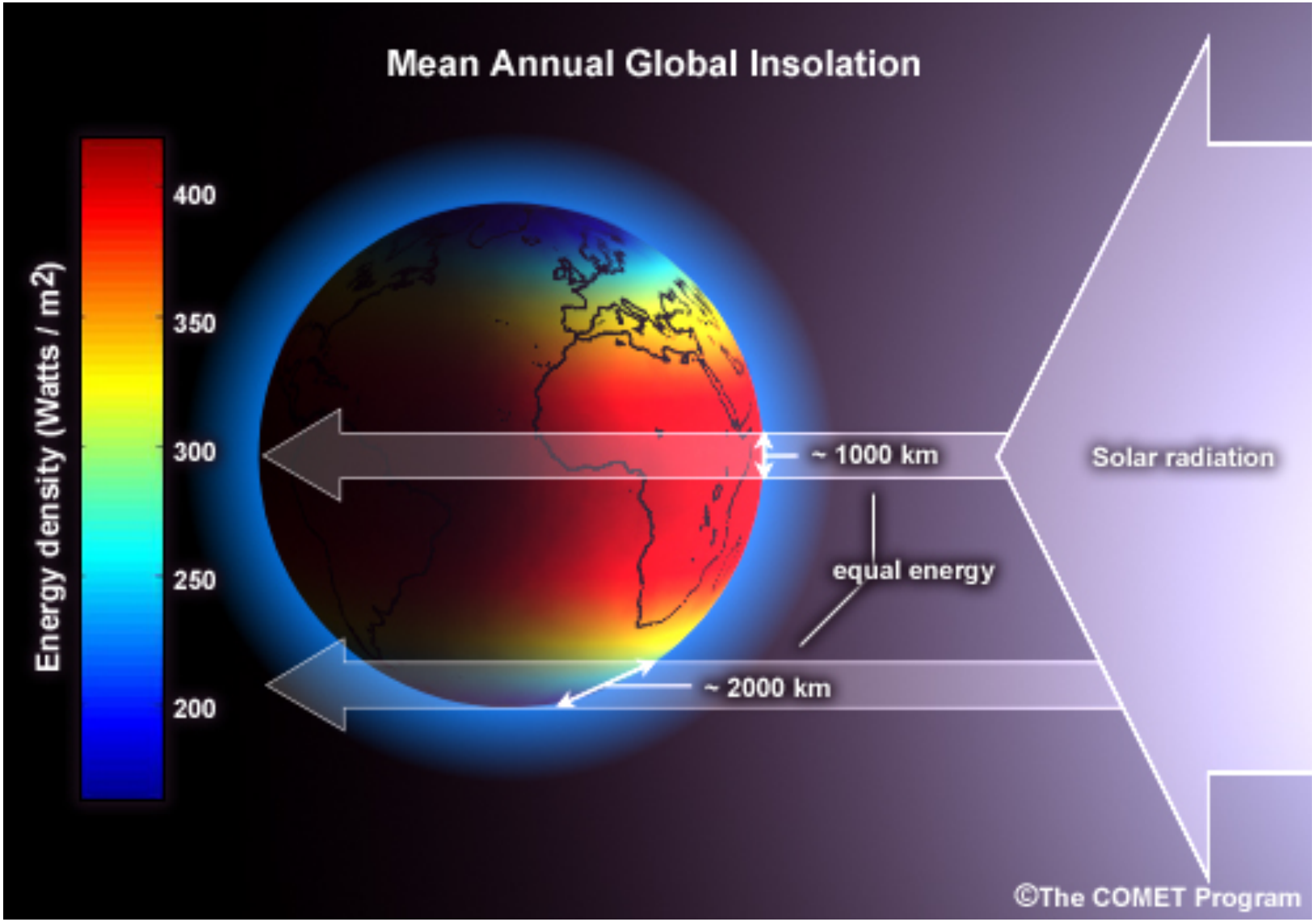
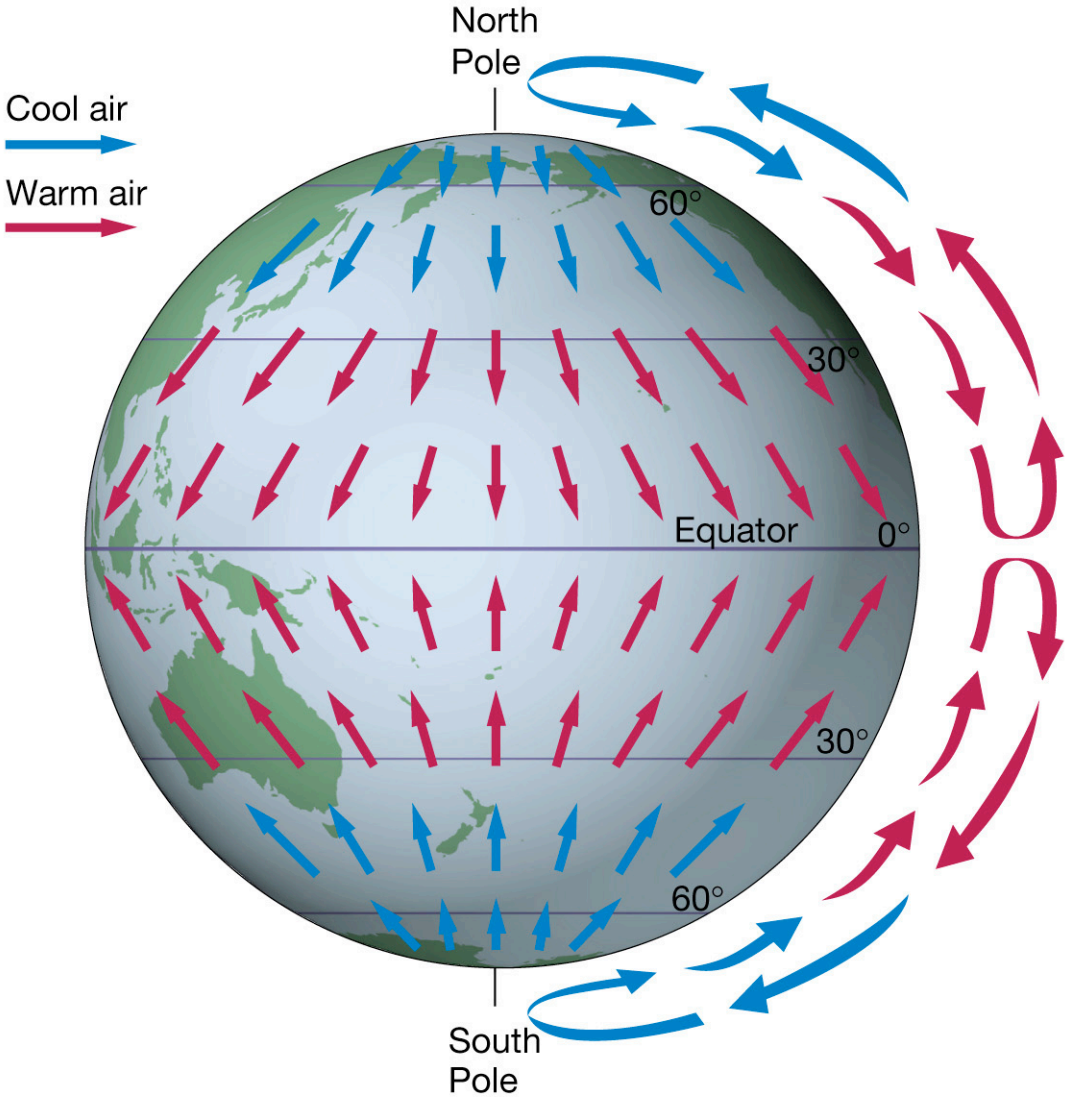
Circulación Armosférica

- Calentamiento diferencial
- Celdas de Circulación
- Regiones Tropicales y Subtropicales
- Patrones de viento global

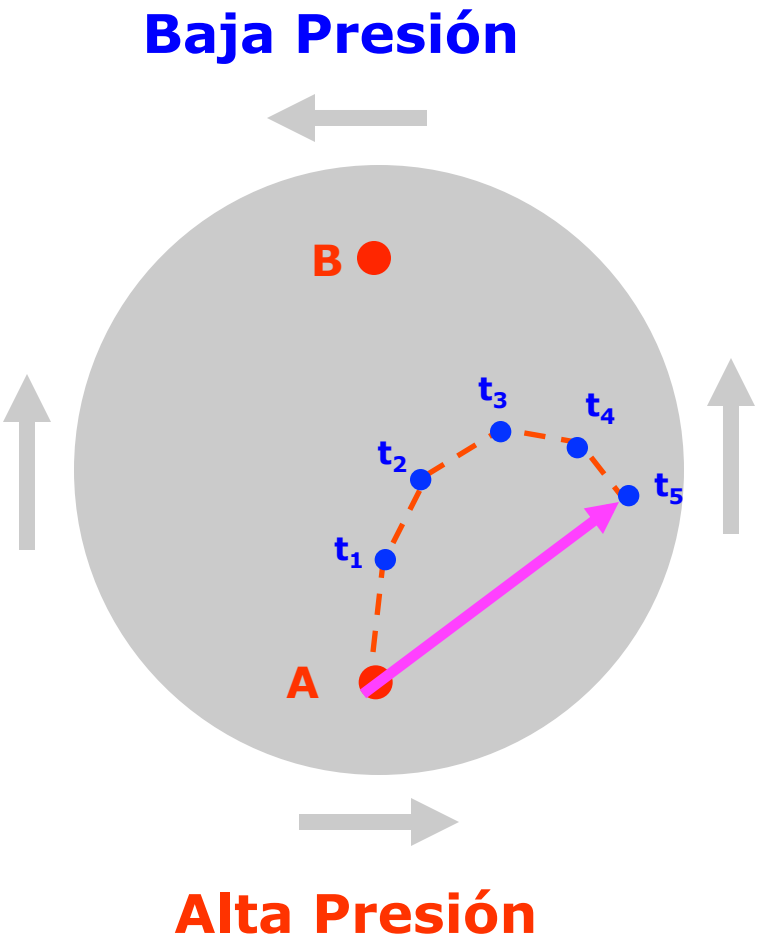
Insolación diferencial

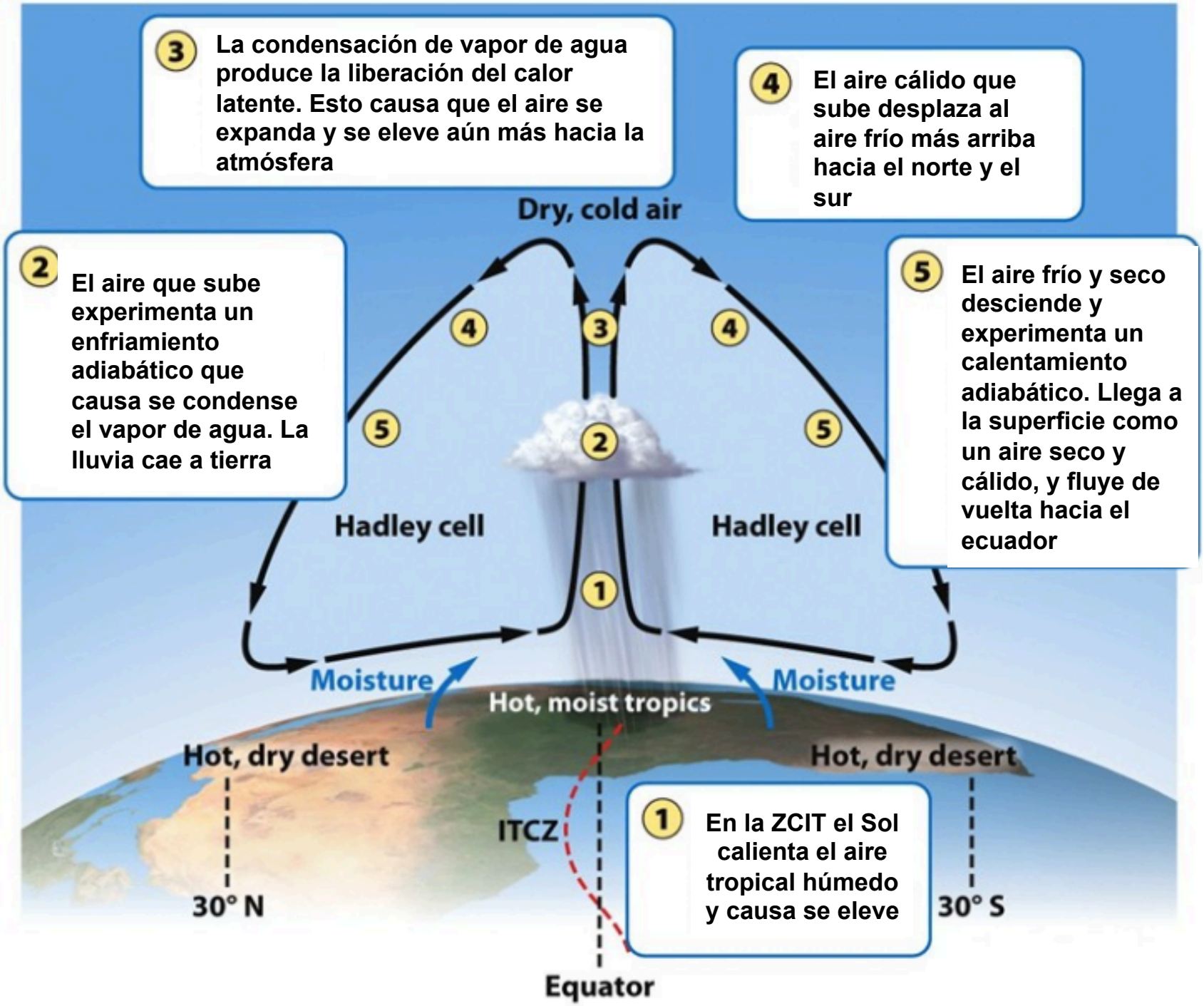


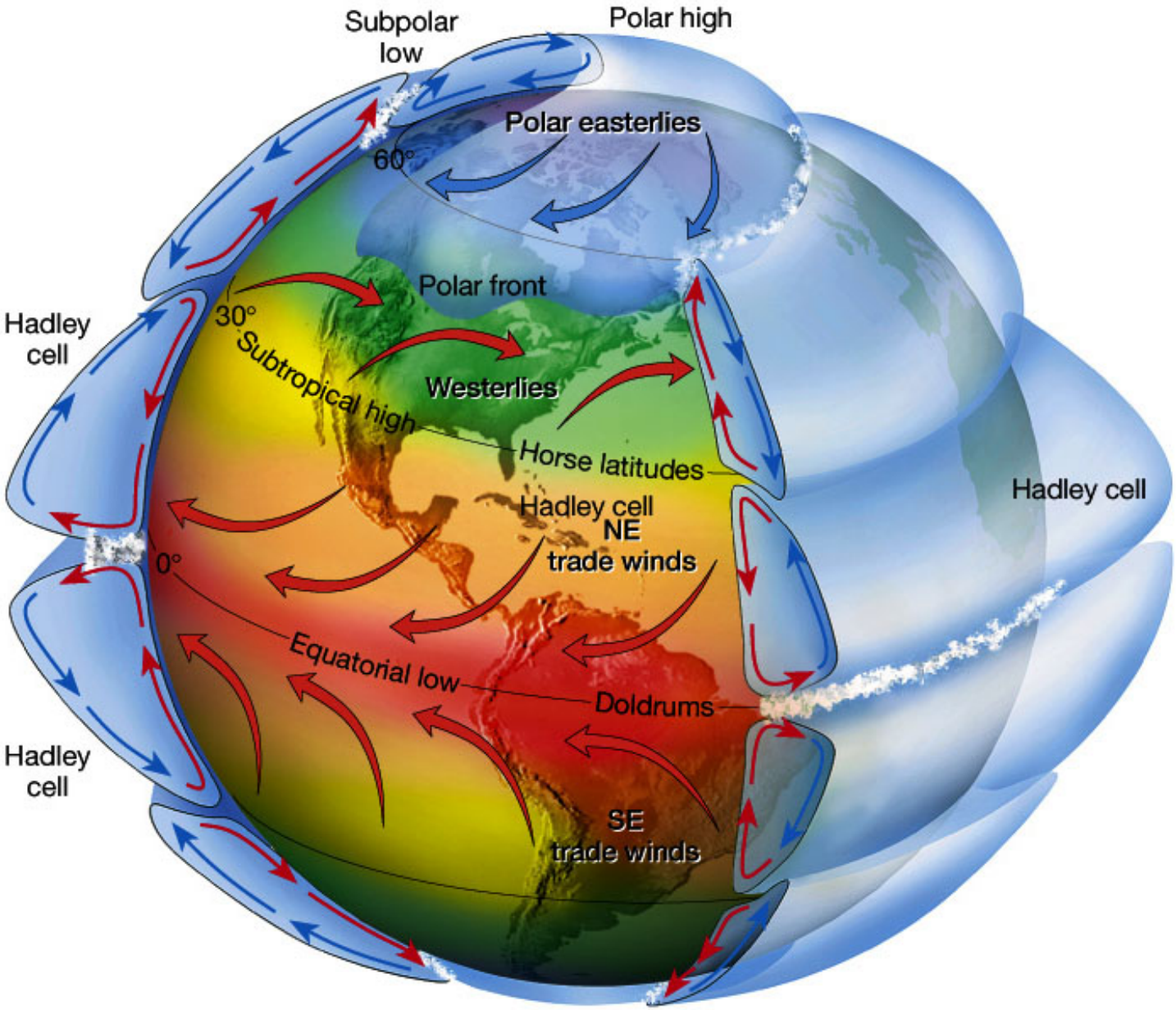
Circulación atmosférica tierra sin rotación



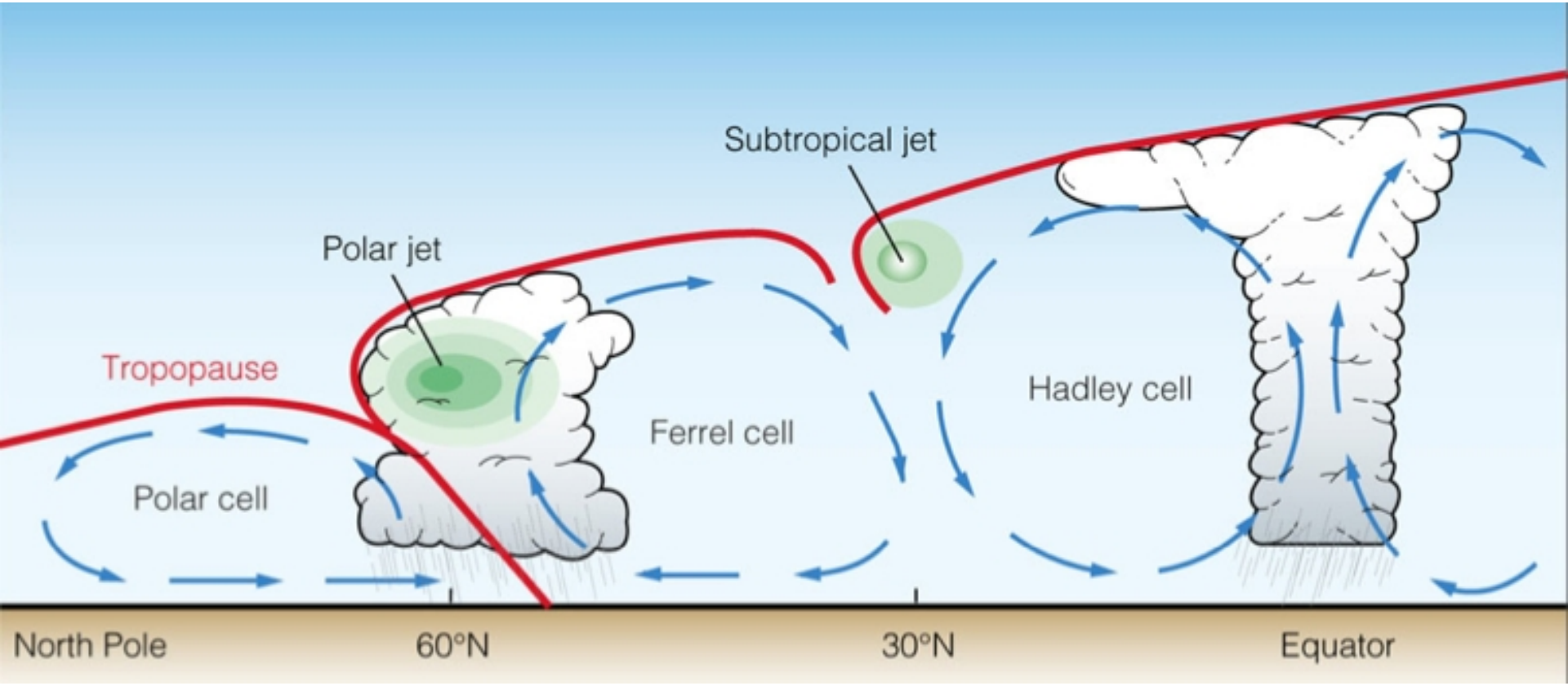
Hemisferio Norte

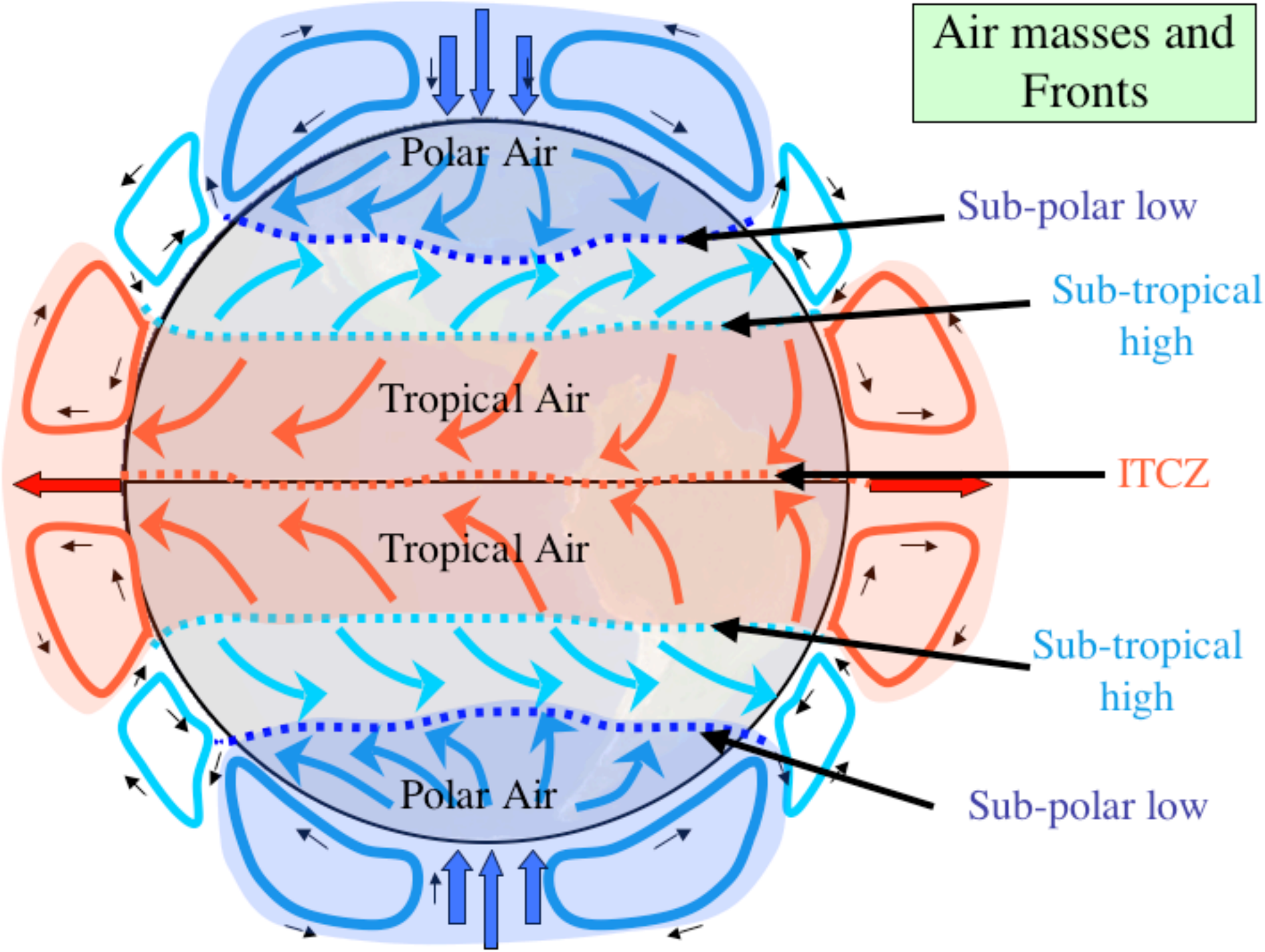


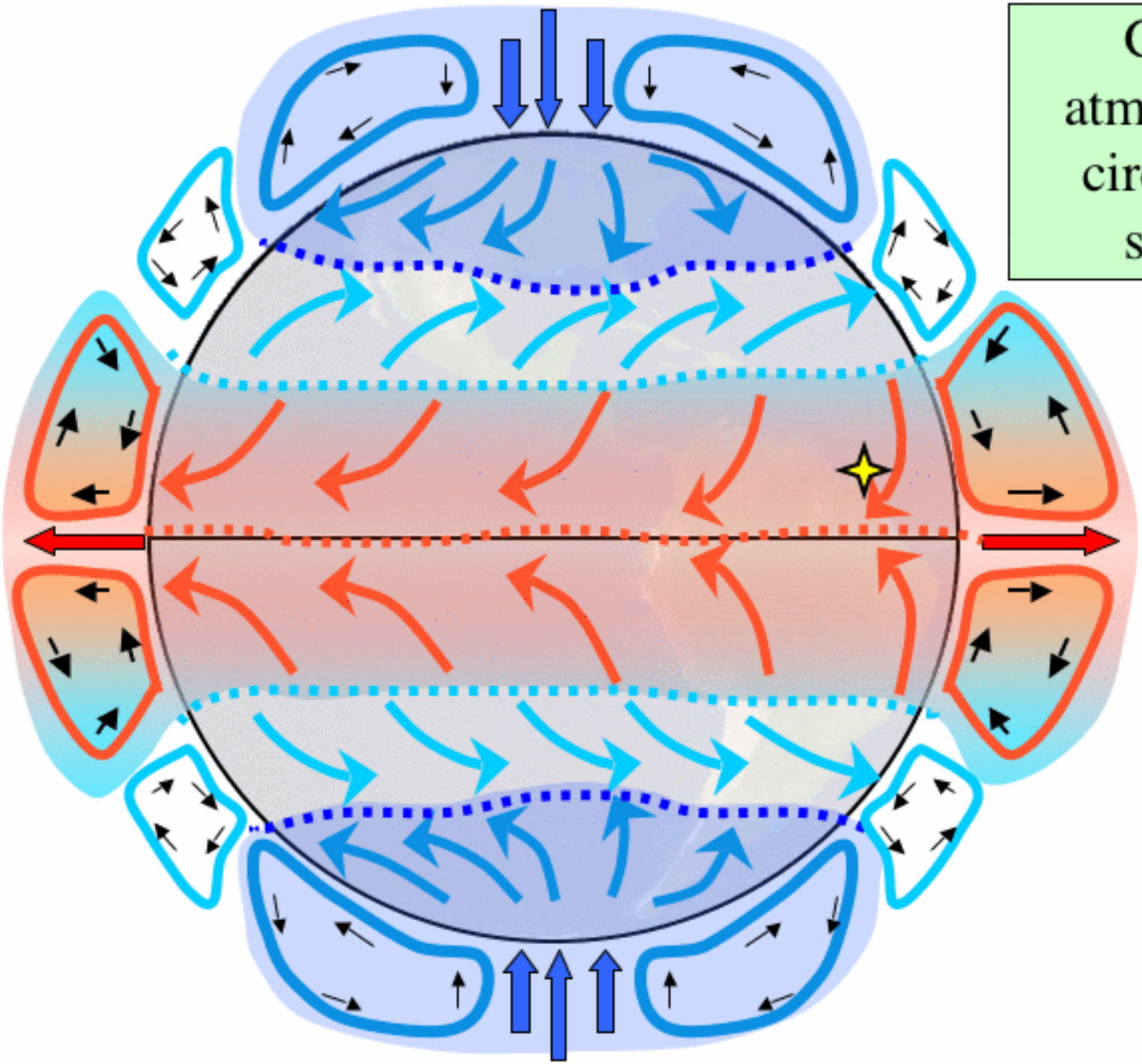

3 La condensación de vapor de agua produce la liberación del calor latente. Esto causa que el aire se expanda y se eleve aún más hacia la atmósfera
4 El aire cálido que sube desplaza al aire frío más arriba hacia el norte y el sur
Dry, cold air
2 El aire que sube experimenta un enfriamiento adiabático que causa se condense el vapor de agua. La lluvia cae a tierra
5 El aire frío y seco desciende y experimenta un calentamiento adiabático. Llega a la superficie como un aire seco y cálido, y fluye de vuelta hacia el ecuador
4
3
4
5
2
5
Hadley cell
Hadley cell
1
Moisture
Moisture
Hot, moist tropics
Hot, dry desert
Hot, dry desert
ITCZ
1 En la ZCIT el Sol calienta el aire tropical húmedo y causa se eleve
30° N
30° S
Equator


Subpolar low
Polar high
Polar easterlies
60°
Polar front
Hadley cell
30°
Subtropical high
Westerlies
Horse latitudes
Hadley cell
NE trade winds
Hadley cell
0°
Equatorial low
Doldrums
Hadley cell
SE trade winds

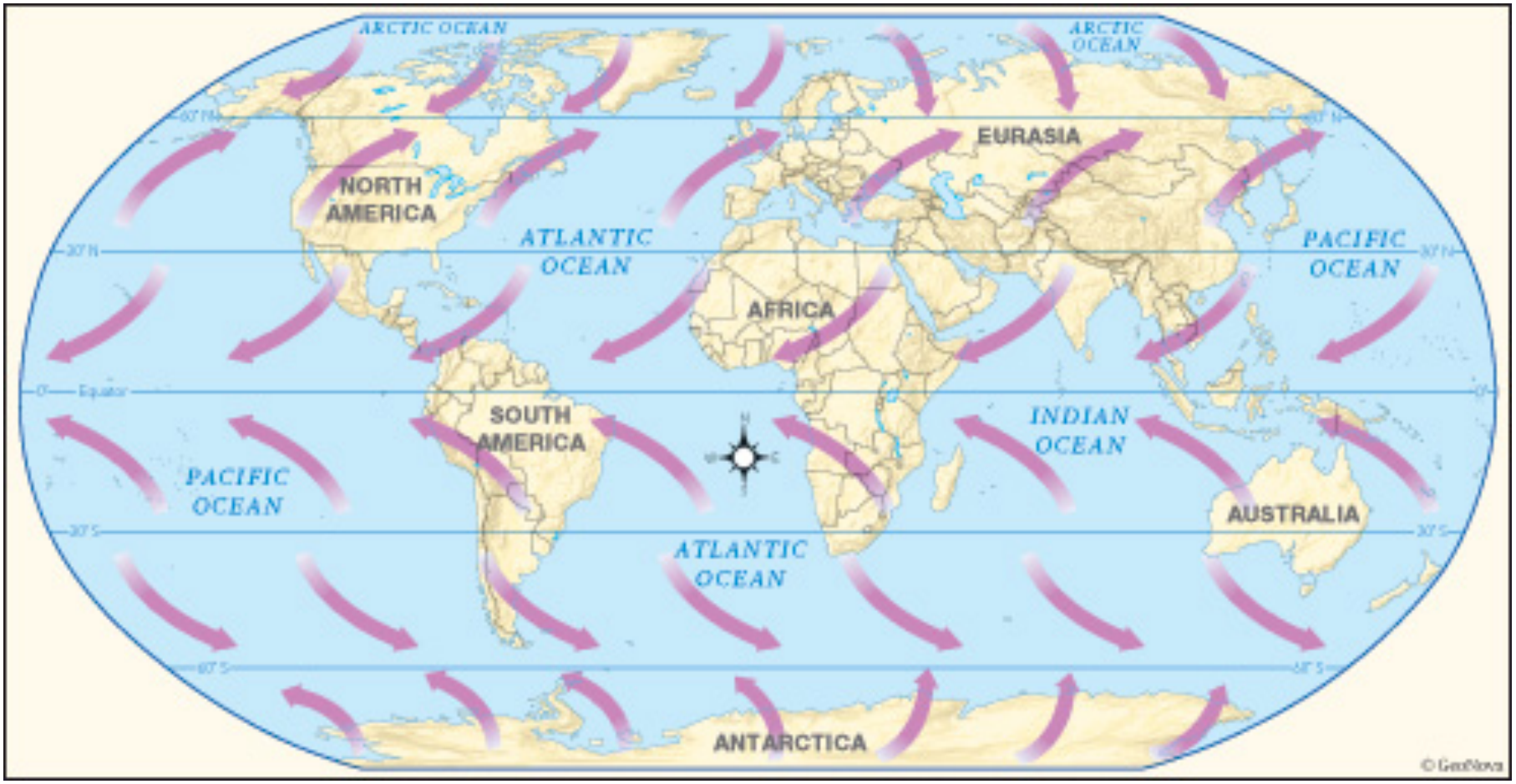
Corte Transversal Celdas de Circulación Atmosférica

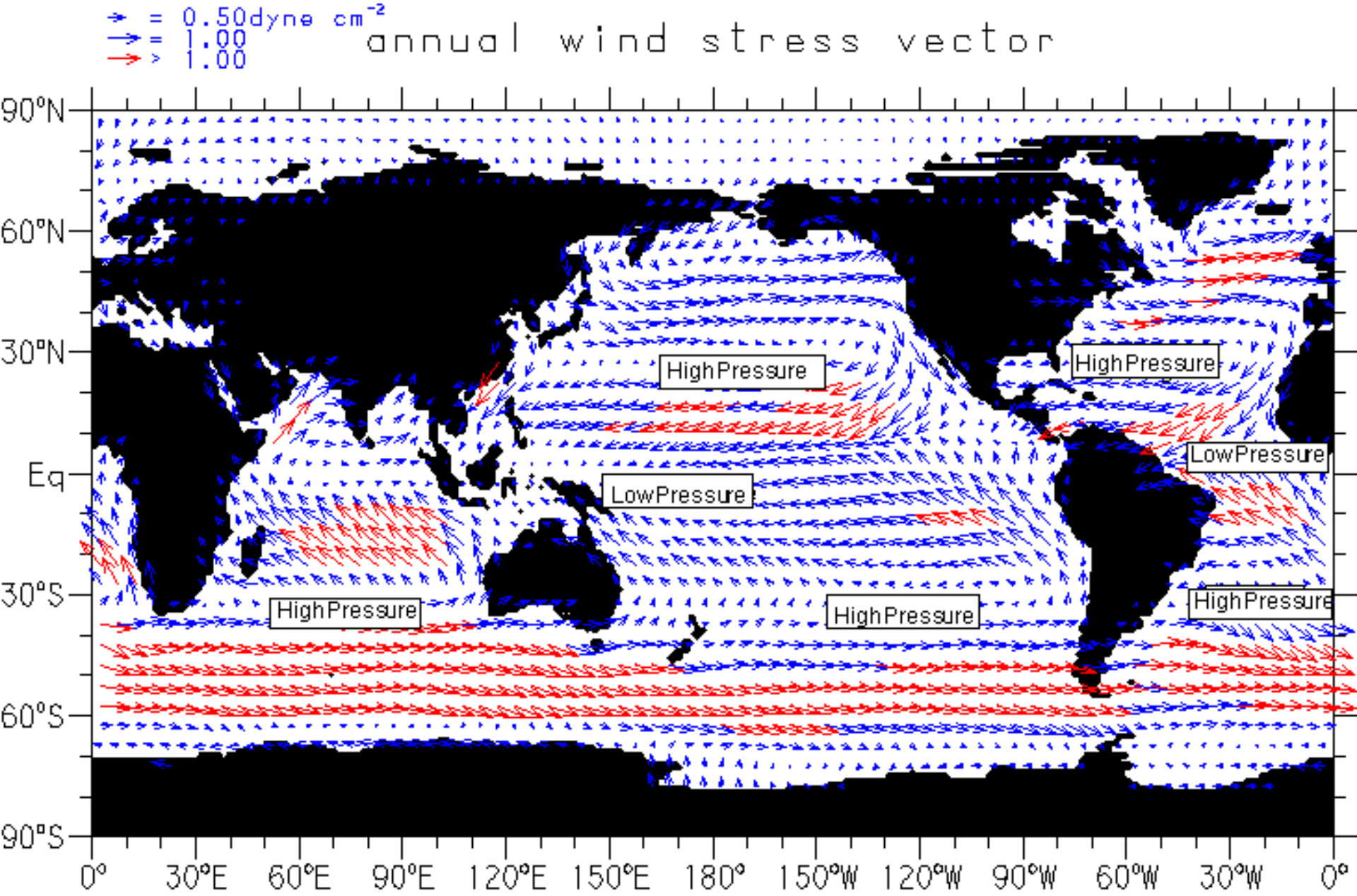



Air masses and Fronts
Polar Air
Sub-polar low
Sub-tropical high
Tropical Air
ITCZ
Tropical Air
Sub-tropical high
Polar Air
Sub-polar low



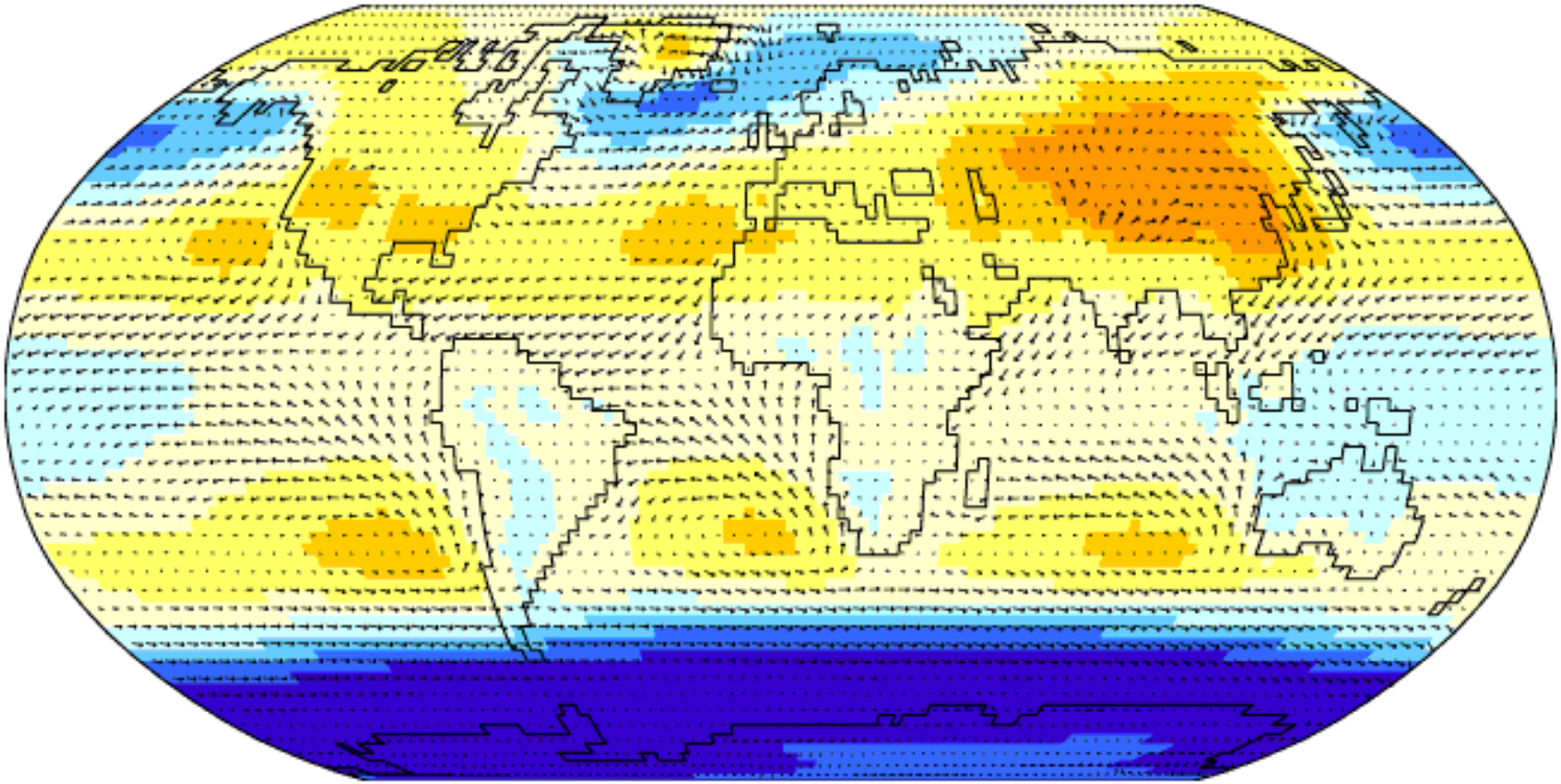
Global atmospheric circulation system


ARCTIC OCEAN
ARCTIC OCEAN
EURASIA
NORTH AMERICA
ATLANTIC OCEAN
PACIFIC OCEAN
AFRICA
Equator
SOUTH AMERICA
INDIAN OCEAN
PACIFIC OCEAN
AUSTRALIA
ATLANTIC OCEAN
ANTARCTICA


= 0.50dyne cm^{-2}
= 1.00
> 1.00
annual wind stress vector
90°N
60°N
30°N
Eq
30°S
60°S
90°S
0°
30°E
60°E
90°E
120°E
150°E
180°
150°W
120°W
90°W
60°W
30°W
0°
High Pressure
High Pressure
Low Pressure
Low Pressure
High Pressure
High Pressure
High Pressure

Sea-Level Pressure and Surface Winds

Dec



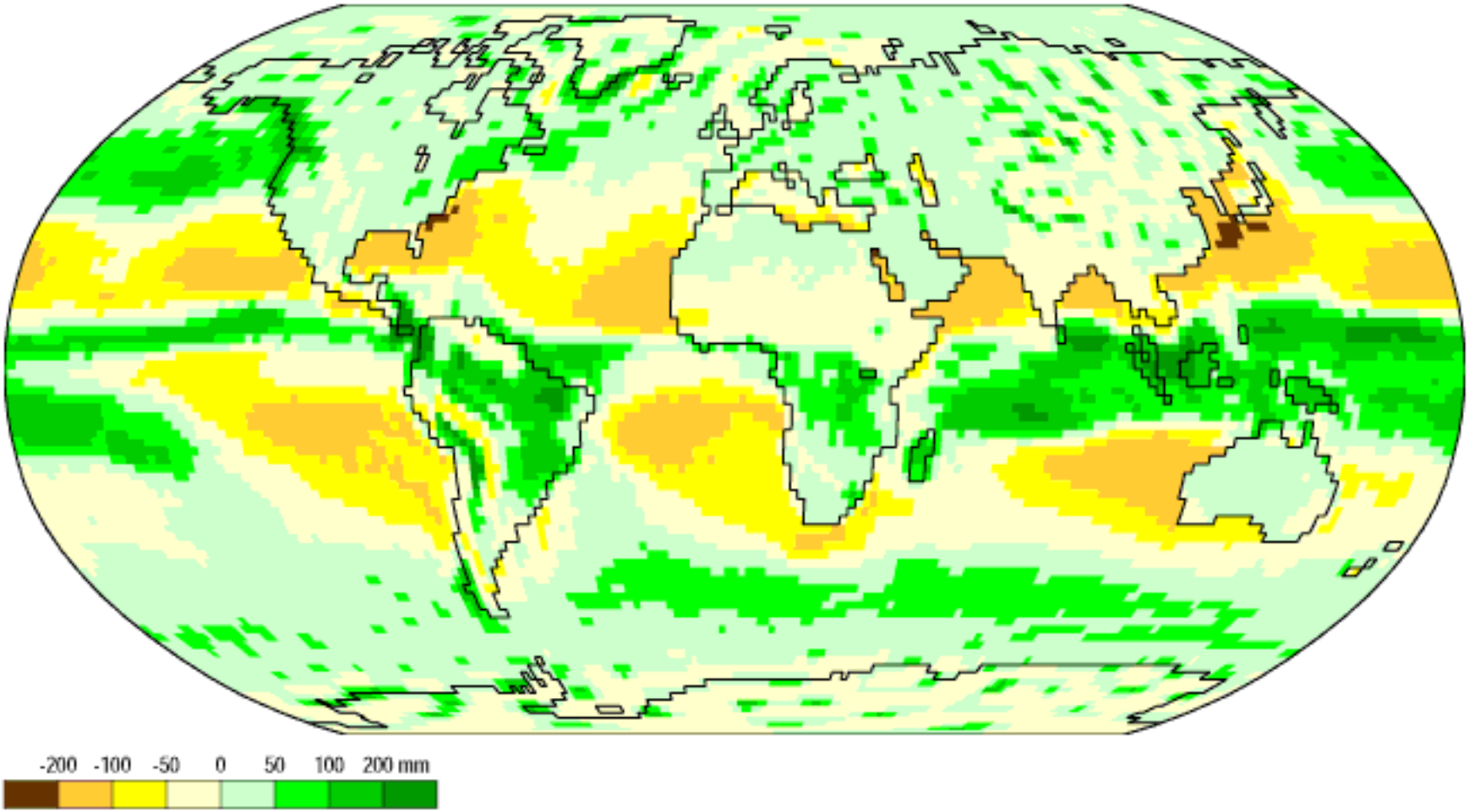
995 1000 1005 1010 1015 1020 1025 mb

1 2 4 8 16 32 m/sec

Data: NCEP/NCAR Reanalysis Project, 1959-1997 Climatologies
Animation: Department of Geography, University of Oregon, March 2000

P-E

Dec



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