



Prefeitura de Fortaleza

Secretaria de Urbanismo e Meio Ambiente - SEUMA



**Prefeitura de
Fortaleza**

MUDANÇAS CLIMÁTICAS E O FENÔMENO DA SECA NO CEARÁ

ANTONIO FERREIRA LIMA JÚNIOR

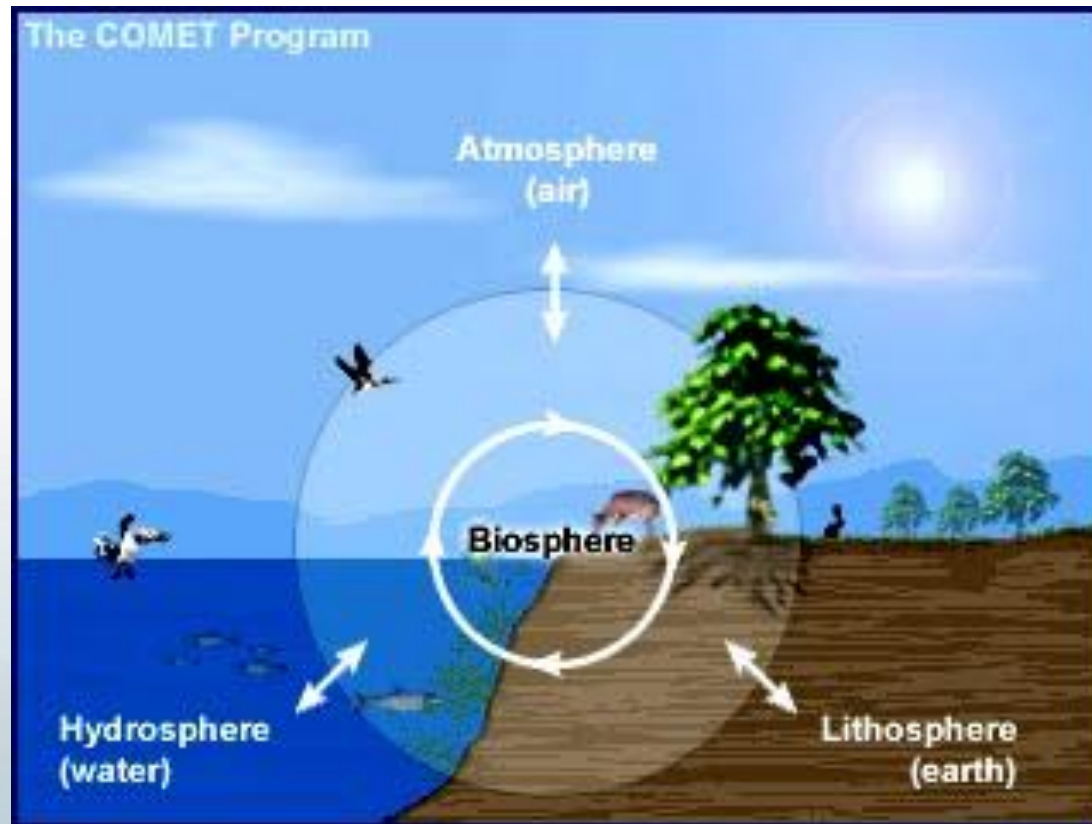
Mestrando em Geografia (UFC)

juniorgeoufc@gmail.com



Prefeitura de
Fortaleza

CLIMA





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TEMPO x CLIMA

Tempo Atmosférico:

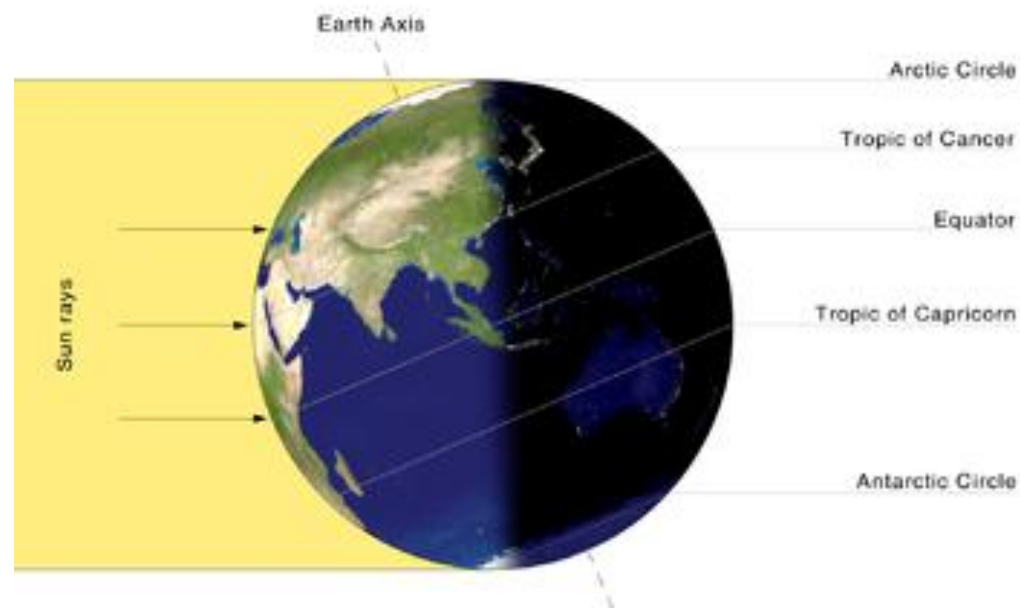
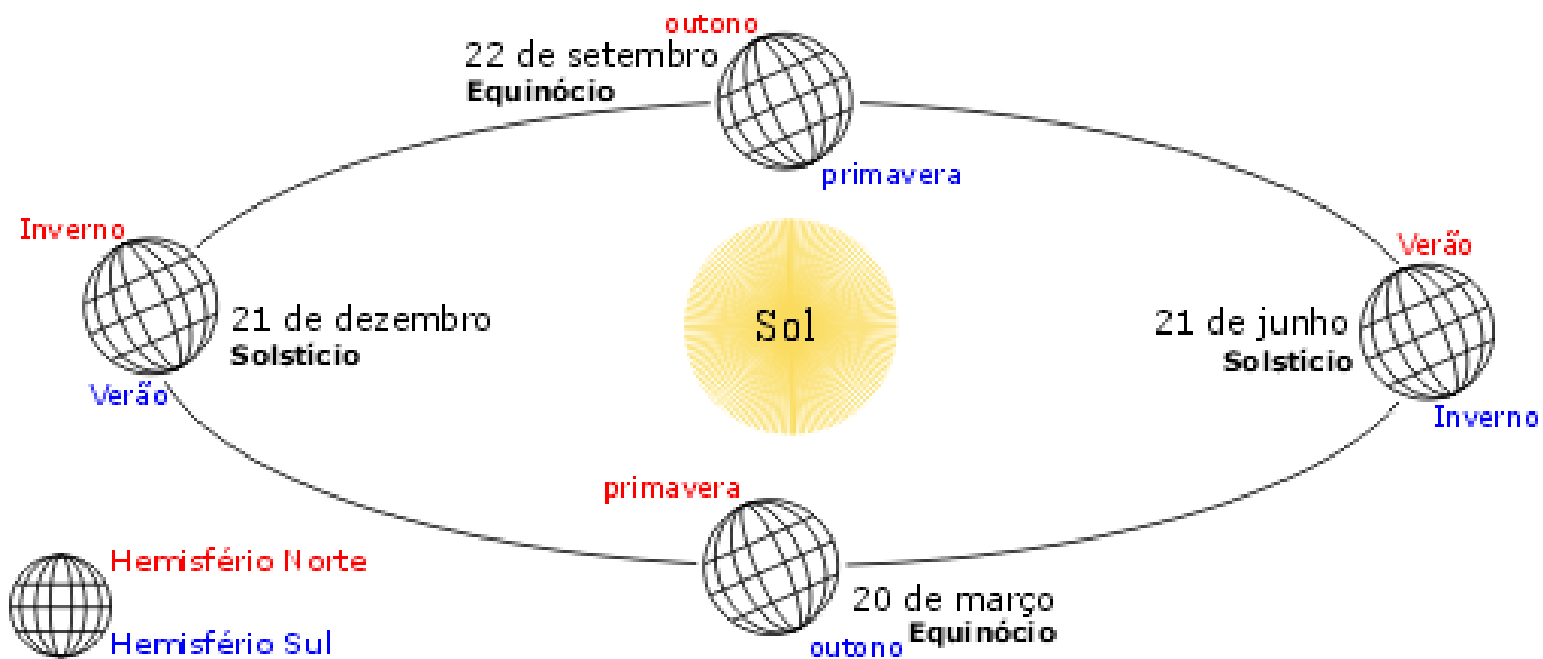
Estado momentâneo da
atmosfera

Clima: Pelo menos 30 anos
de observações do
elementos atmosféricos



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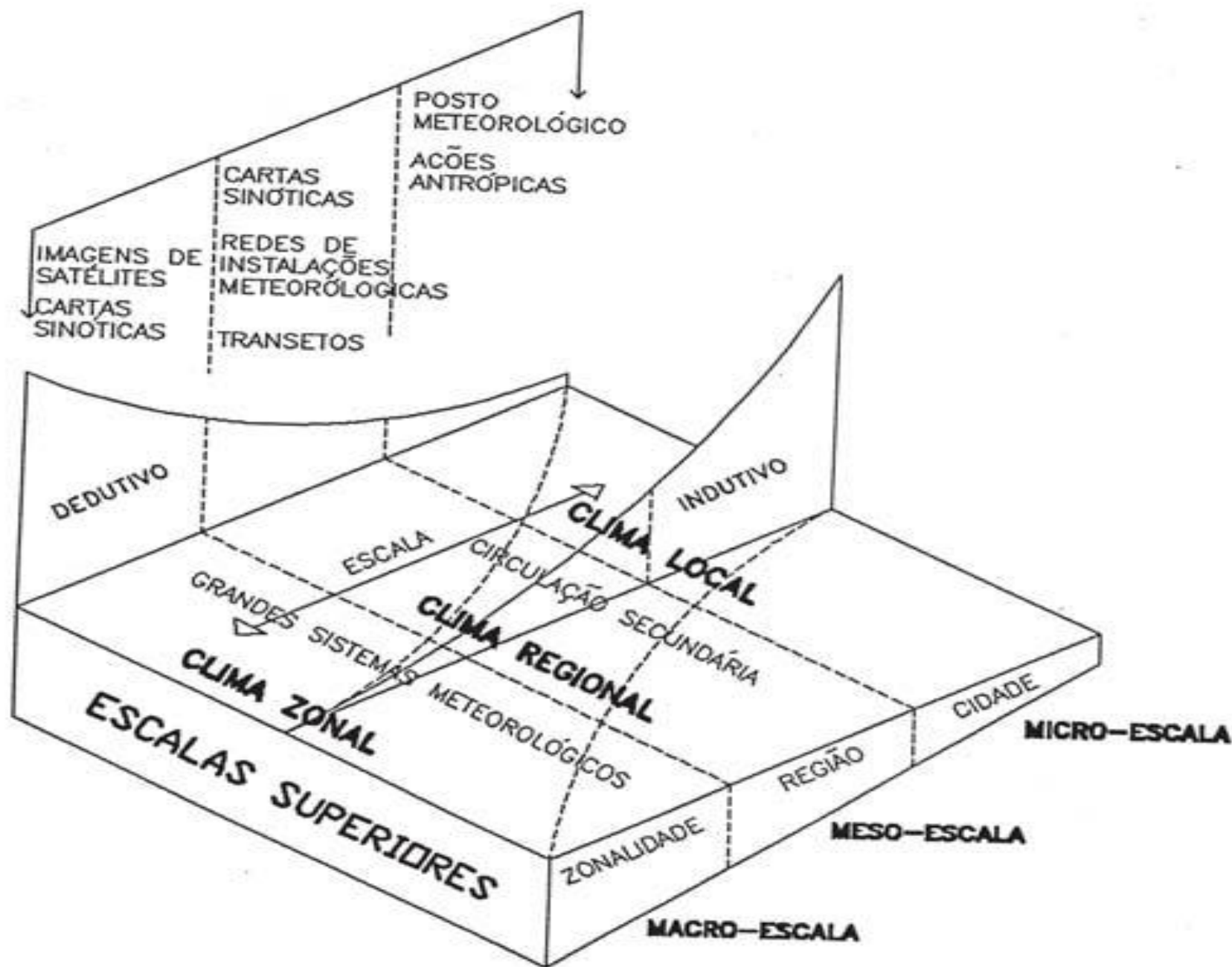
RELAÇÕES ASTRONÔMICAS





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MULTIPLAS ESCALAS NO CLIMA



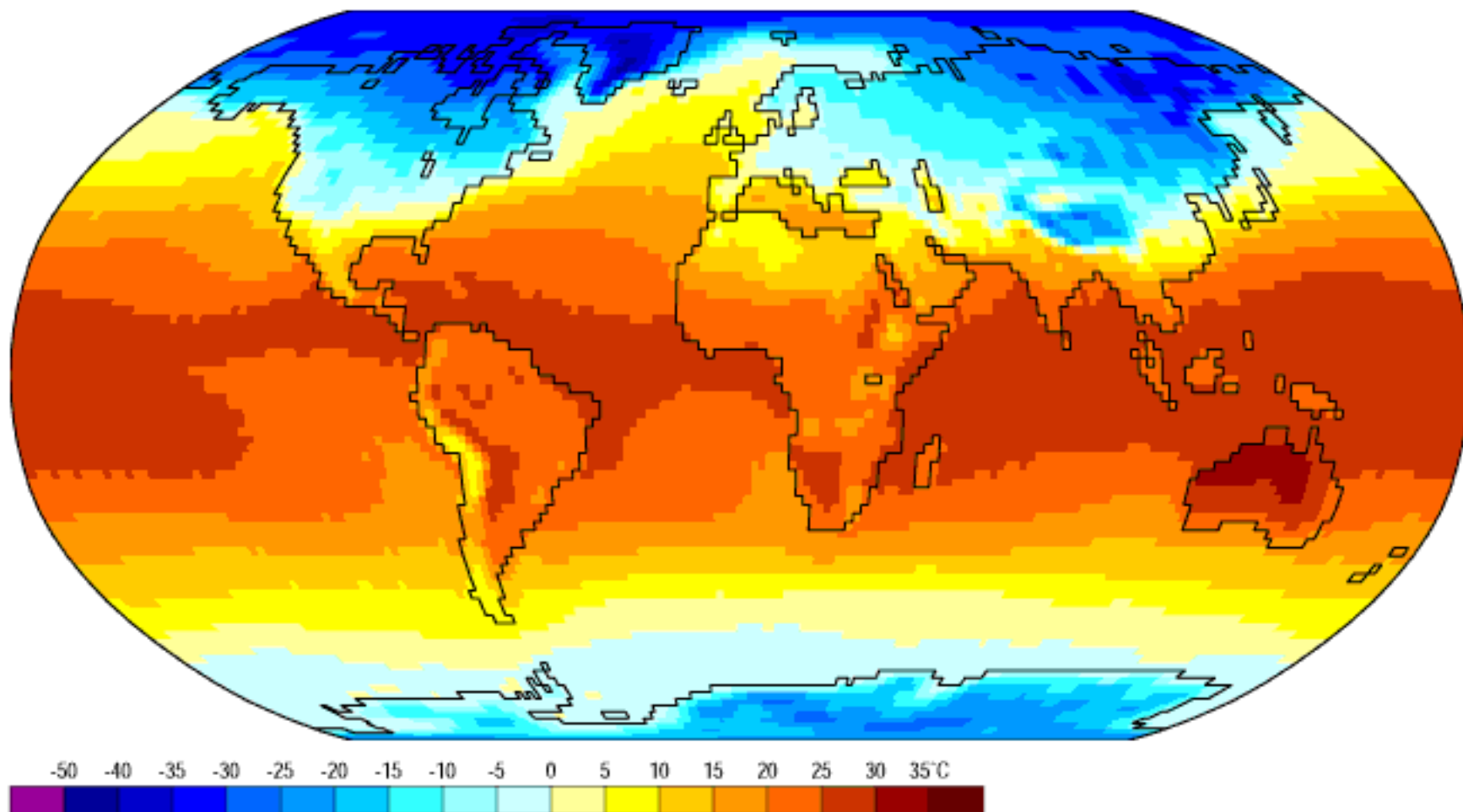


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DINÂMICA ATMOSFÉRICA

Air Temperature

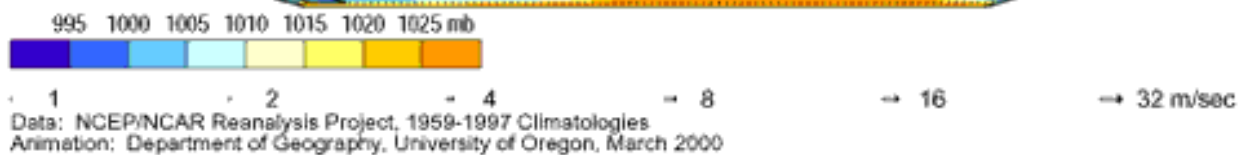
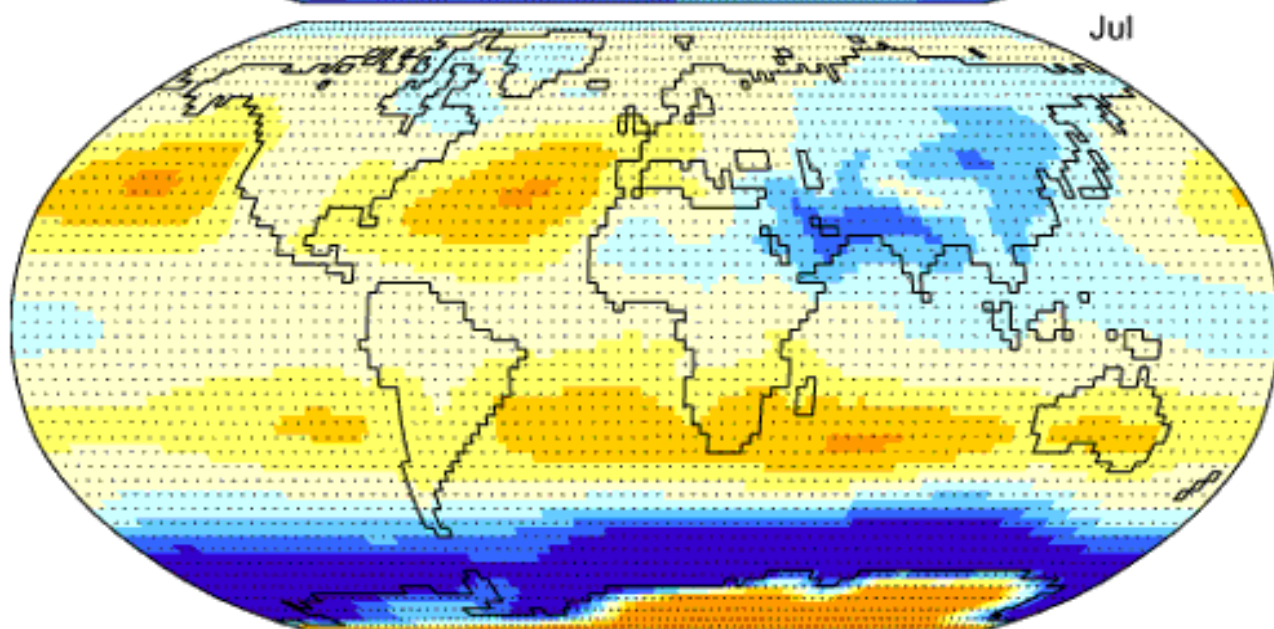
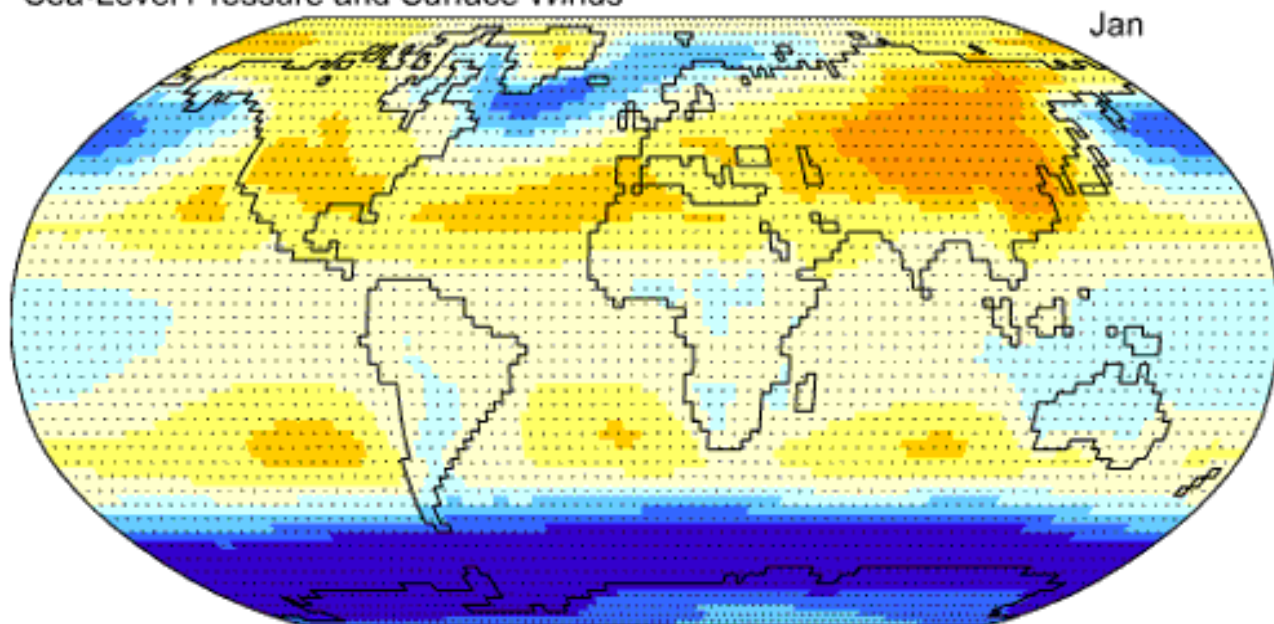
Dec



Data: NCEP/NCAR Reanalysis Project, 1959-1997 Climatologies

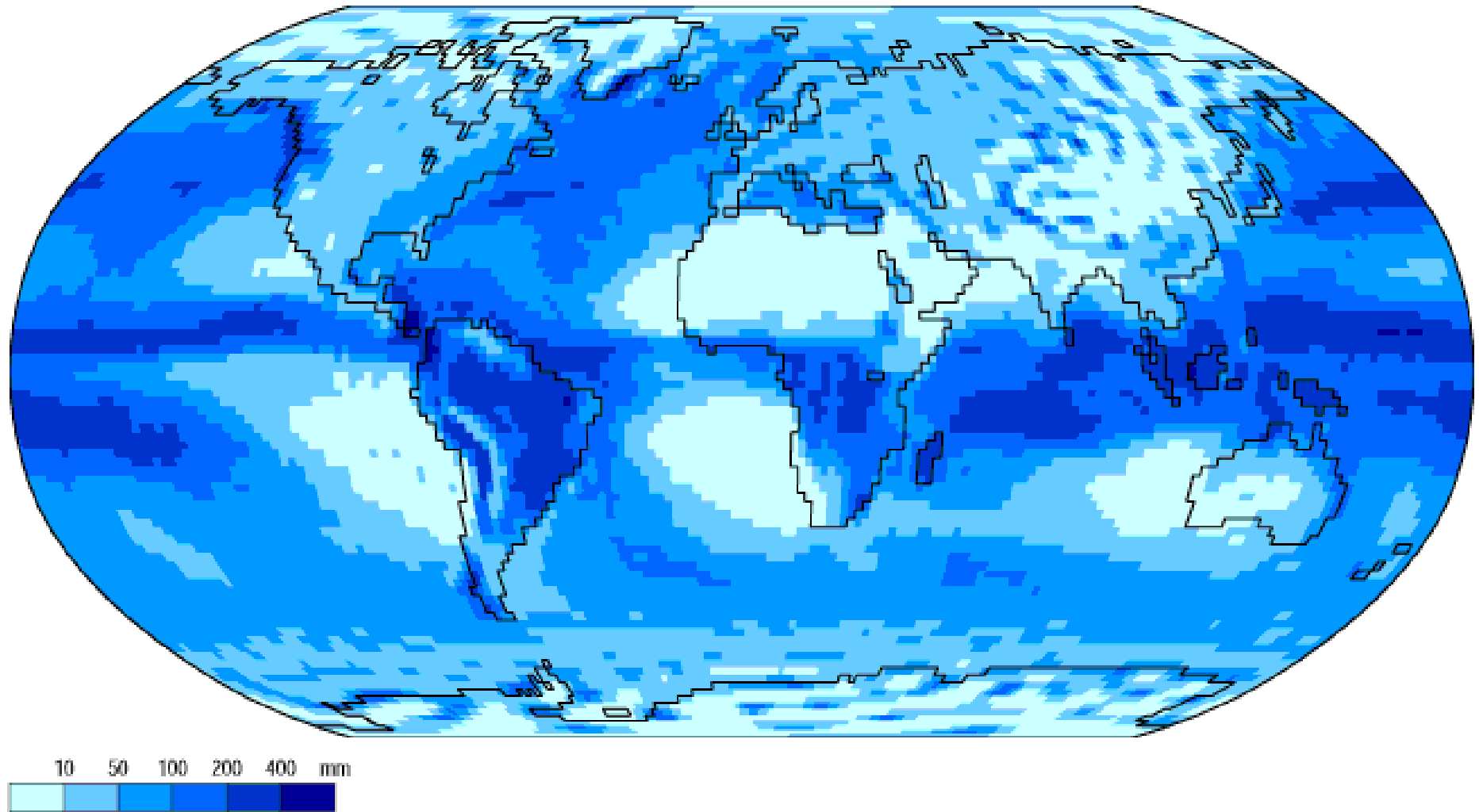
Animation: Department of Geography, University of Oregon, March 2000

Sea-Level Pressure and Surface Winds



Precipitation

Dec



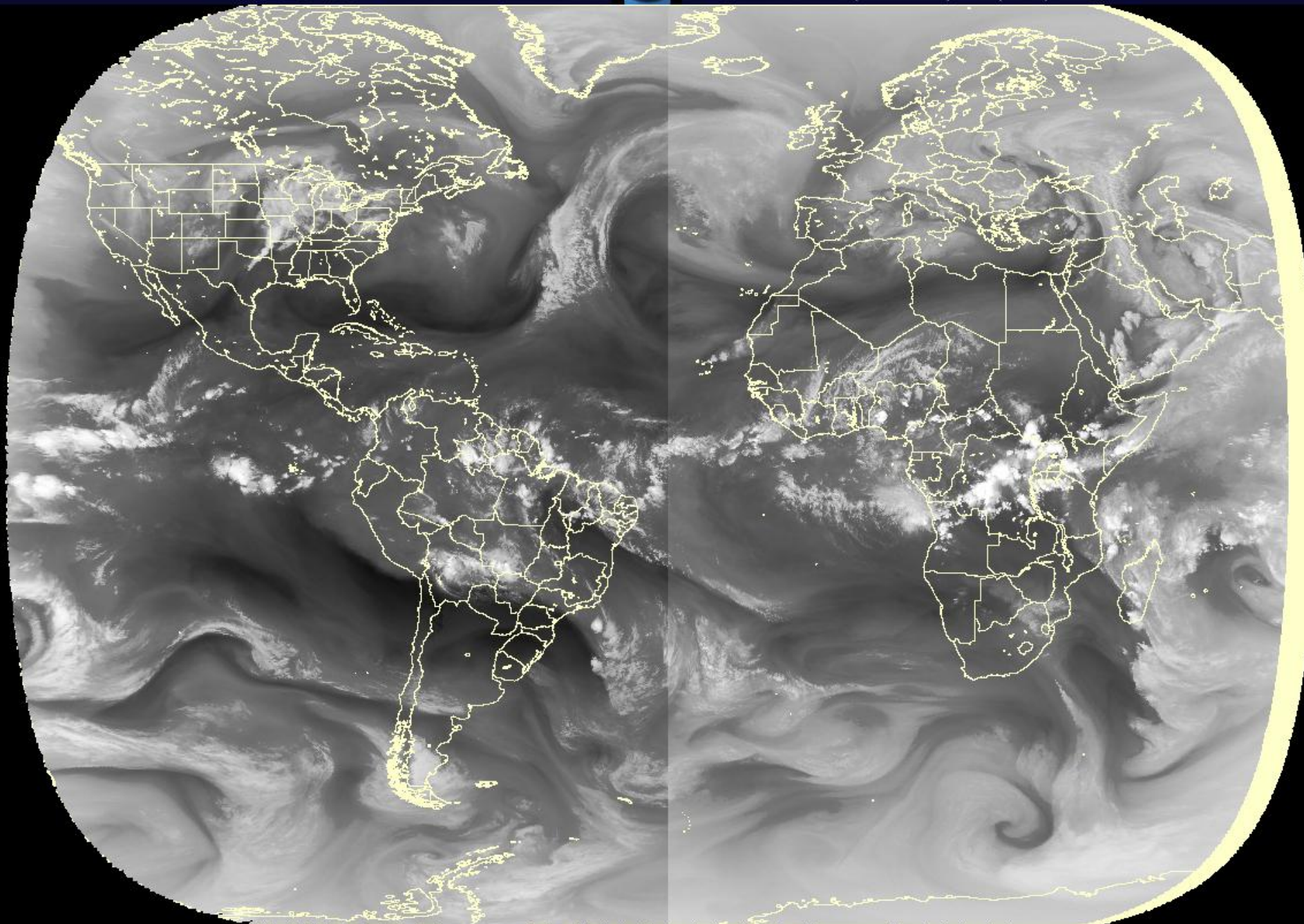
Data: NCEP/NCAR Reanalysis Project, 1959-1997 Climatologies

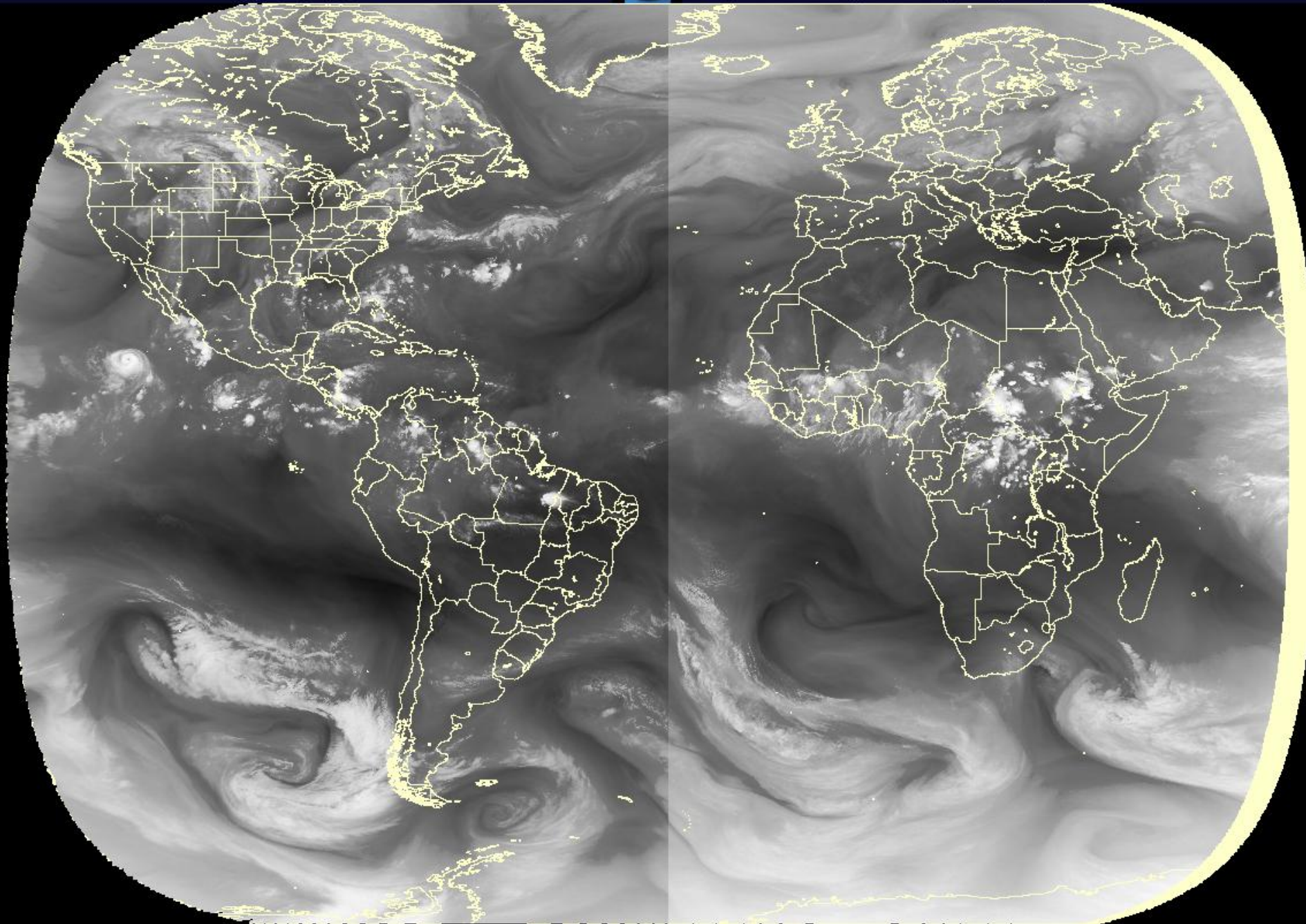
Animation: Department of Geography, University of Oregon, March 2000



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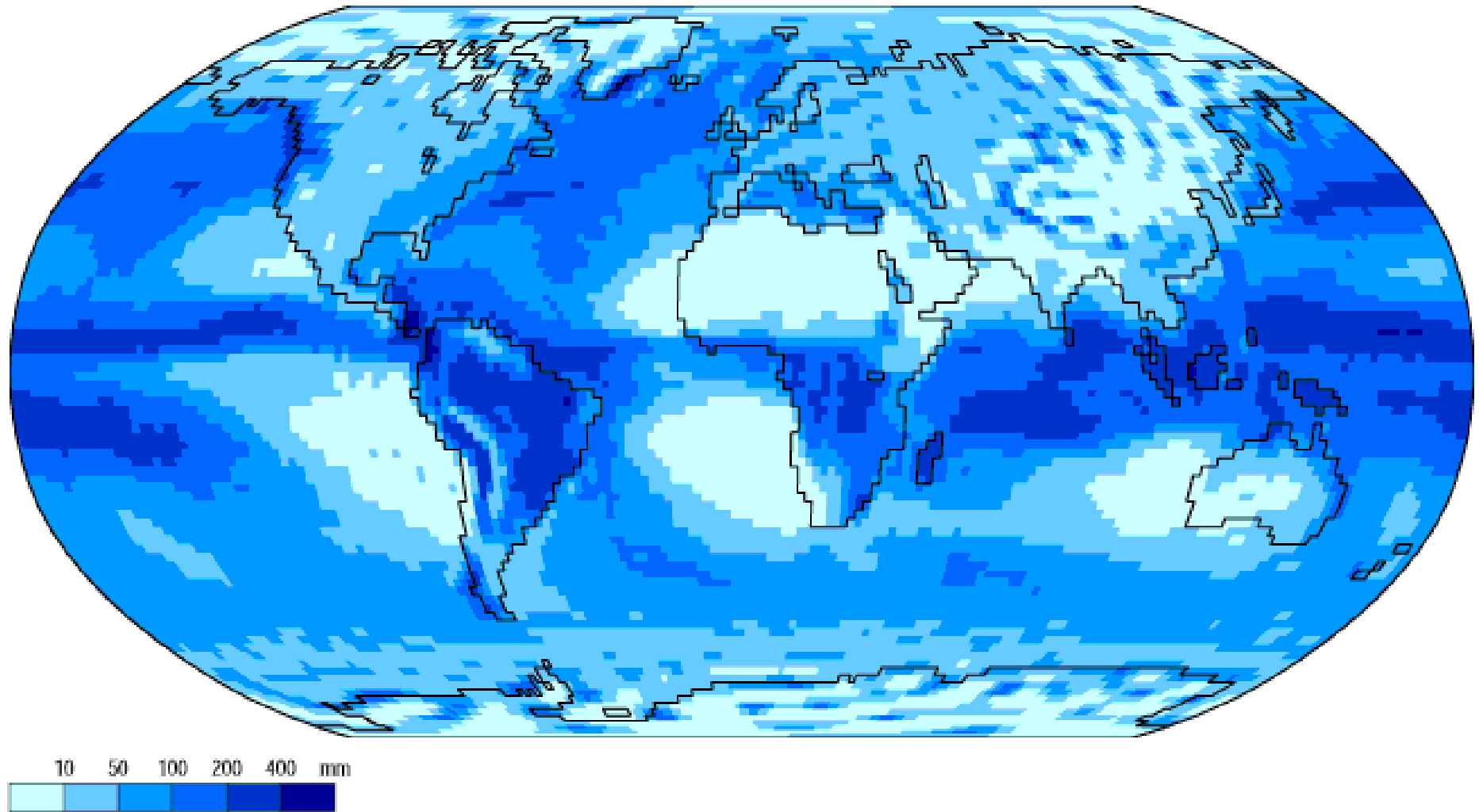
ZONA DE CONVERGÊNCIA INTER TROPICAL - ZCIT





Precipitation

Dec



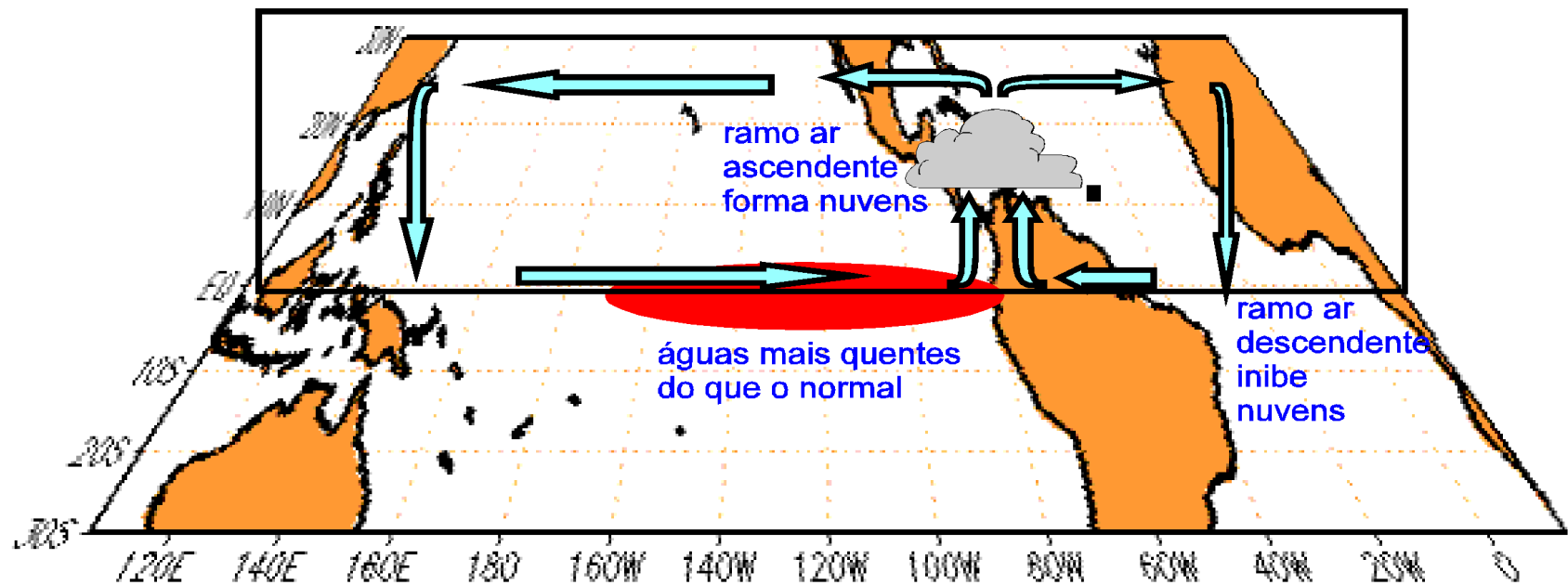
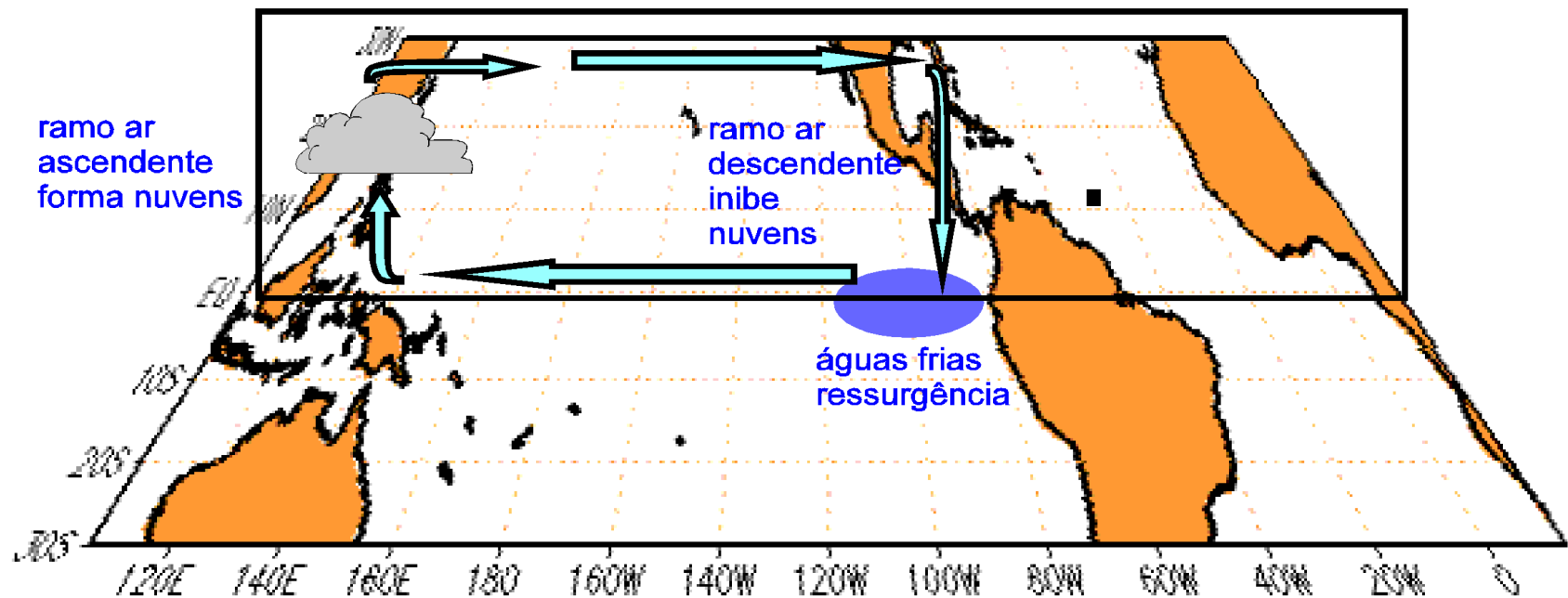
Data: NCEP/NCAR Reanalysis Project, 1959-1997 Climatologies

Animation: Department of Geography, University of Oregon, March 2000

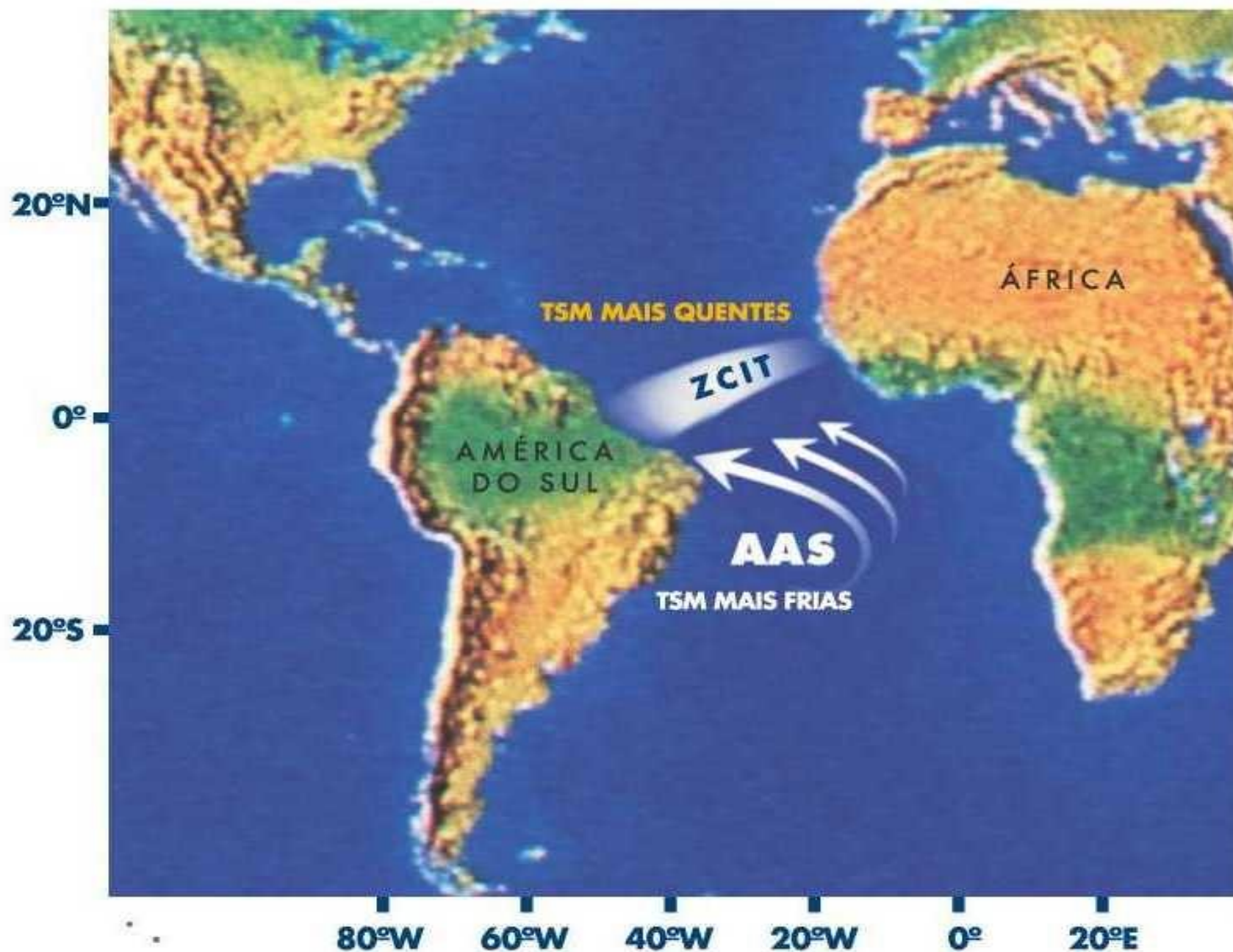


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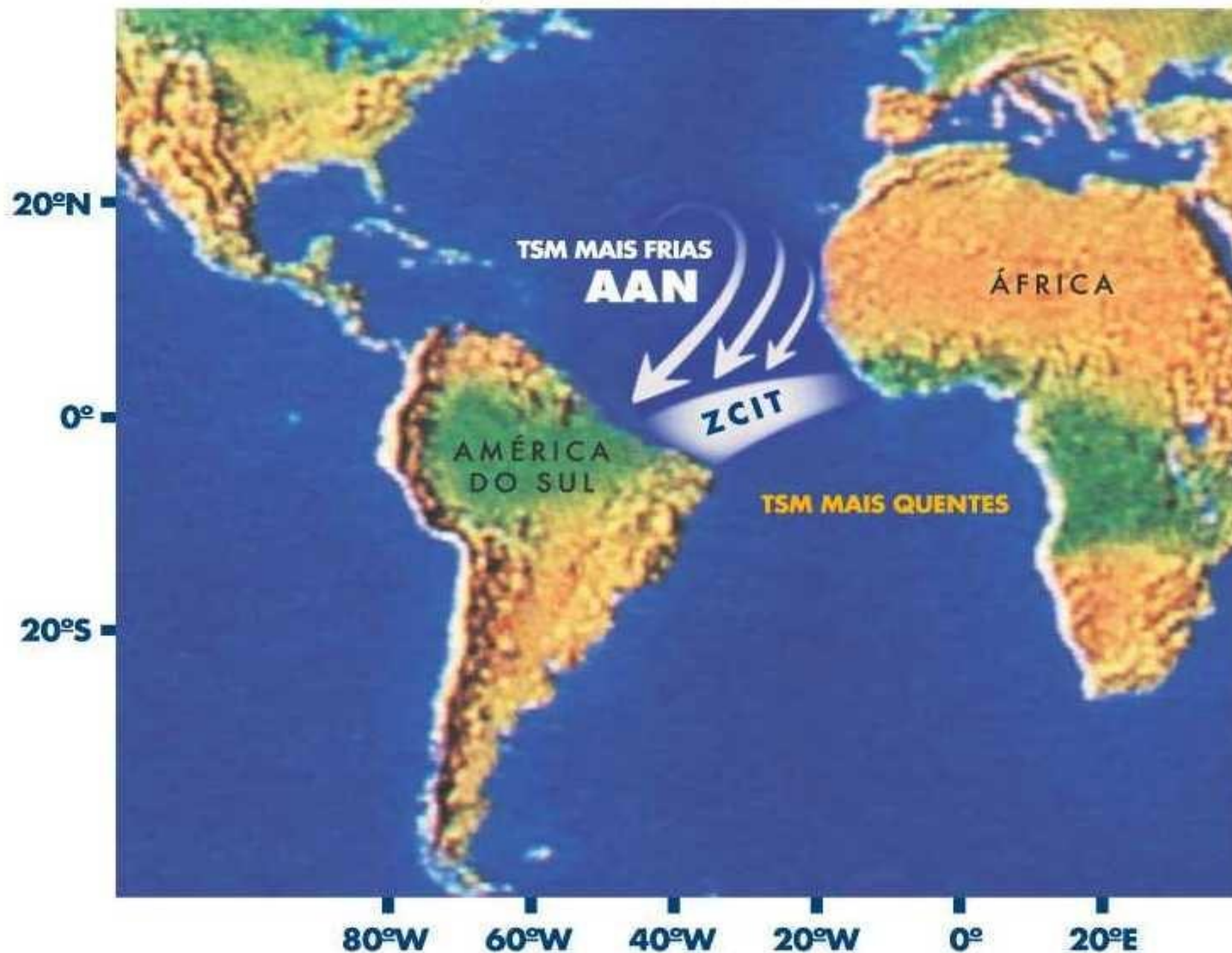
FENÔMENOS OCEÂNICOS



ANO SECO OU MUITO SECO



ANO NORMAL, CHUVOSO OU MUITO CHUVOSO





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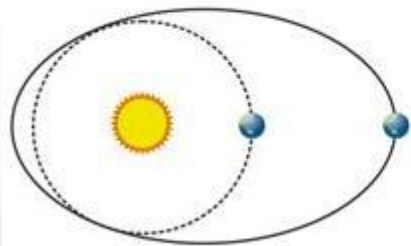
EXISTEM MUDANÇAS CLIMÁTICAS?



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NATURAL x ANTRÓPICA

Milankovitch Cycles



Eccentricity



Obliquity



Precession





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QUESTÕES GERADORAS



- **Como as mudanças climáticas podem afetar as chuvas no Estado?**
- **Quais ações podem ser feitas para amenizar os efeitos da seca no Ceará?**
- **Como as esferas sociais e políticas podem contribuir para a solução deste desafio?**



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