Air Masses and Fronts

The battle begins

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Ch. 9: Air Masses and Fronts

- **Air Masses**
  - → **Sources and Classification**
  - → **Distribution**
- **Fronts**
  - → **Cold Front**
  - → **Warm Front**
  - → **Occluded Fronts**

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Air Masses

- **Definition: a volume of air with a particular temperature and/or humidity characteristics**
- **Source Region: where air masses originate**
- **Classification: warm or cold, moist or dry**

3

Air Masses

xX

c	**Continental**	**P**	**Polar**
m	**Maritime**	**T**	**Tropical**
Humidity		**Temperature**	

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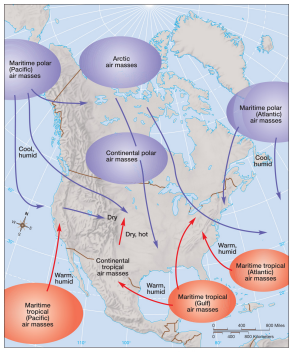
North American Air Masses



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North American Air Masses

TABLE 9–1 Air Masses

Type	Source Regions	Properties at Source
Continental Arctic (cA)	Highest latitudes of Asia, North America, Greenland, and Antarctica	Extremely cold and very dry. Extremely stable. Minimal cloud cover.
Continental Polar (cP)	High-latitude continental interiors	Cold and dry. Very stable. Minimal cloud cover.
Maritime Polar (mP)	High-latitude oceans	Cold, damp, and cloudy. Somewhat unstable.
Continental Tropical (cT)	Low-latitude deserts	Hot and dry. Very unstable.
Maritime Tropical (mT)	Subtropical oceans	Warm and humid.

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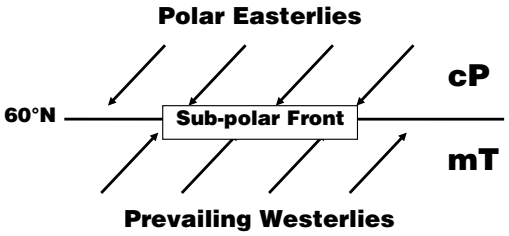
Fronts

— Boundary between air masses



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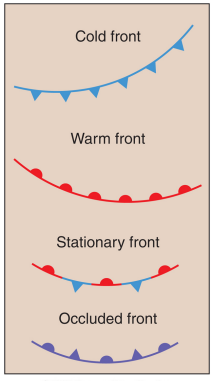

Fronts

- **Fronts are named by the "winning" airmass**
  - → **Ex. Cold front: cold air pushes warm air up and out of its way**
- **Line is boundary between airmasses at the ground**
  - → **Symbols point in the direction of the frontal movement**

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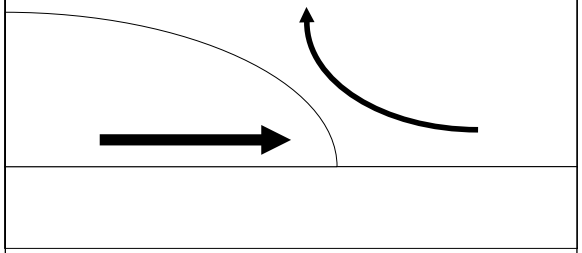
Cold Front



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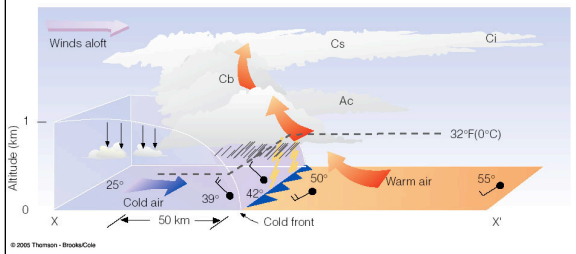
Cold Front



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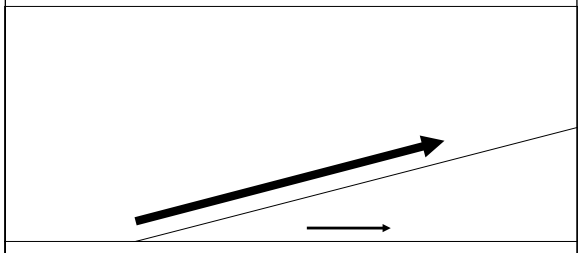
Warm Front



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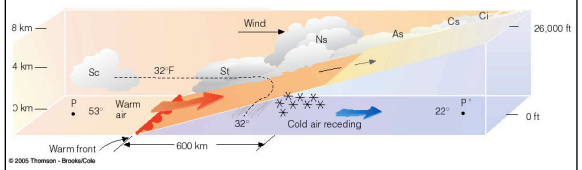
Warm Front



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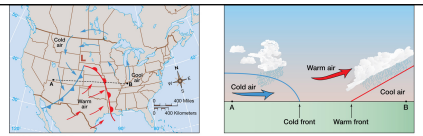

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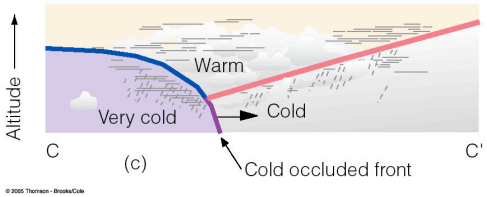
Cold Occlusion



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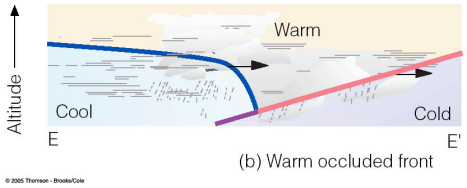
Warm Occlusion



(b) Warm occluded front