Hydrologic Cycle

The hydrologic cycle is a continuous process by which water is transported from the oceans to the atmosphere to the land and back to the sea.

The subsystems are :

- Precipitation
- Evaporation
- Evapotranspiration
- Infiltration
- Overland flow
- Stream flow
- Groundwater flow

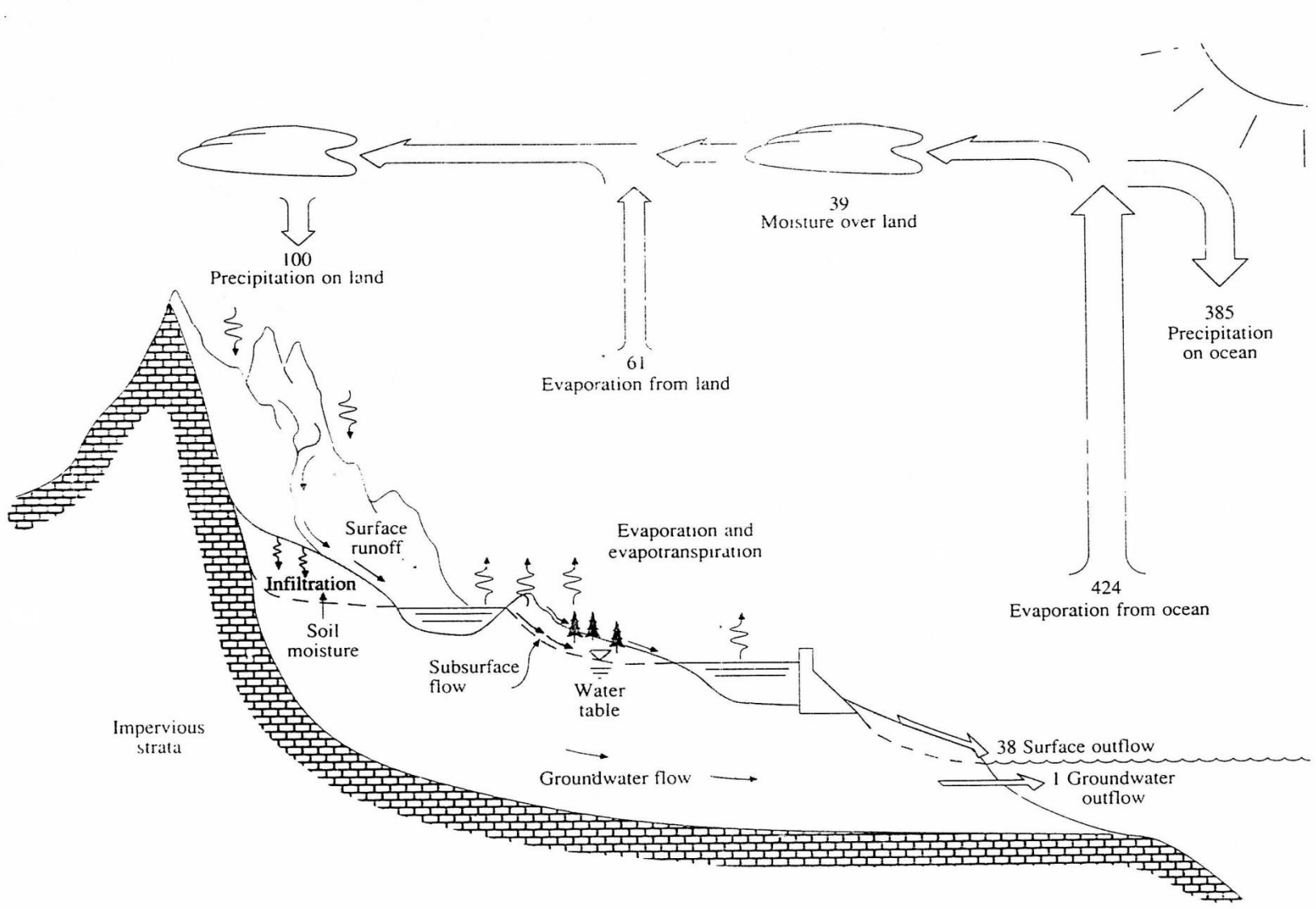
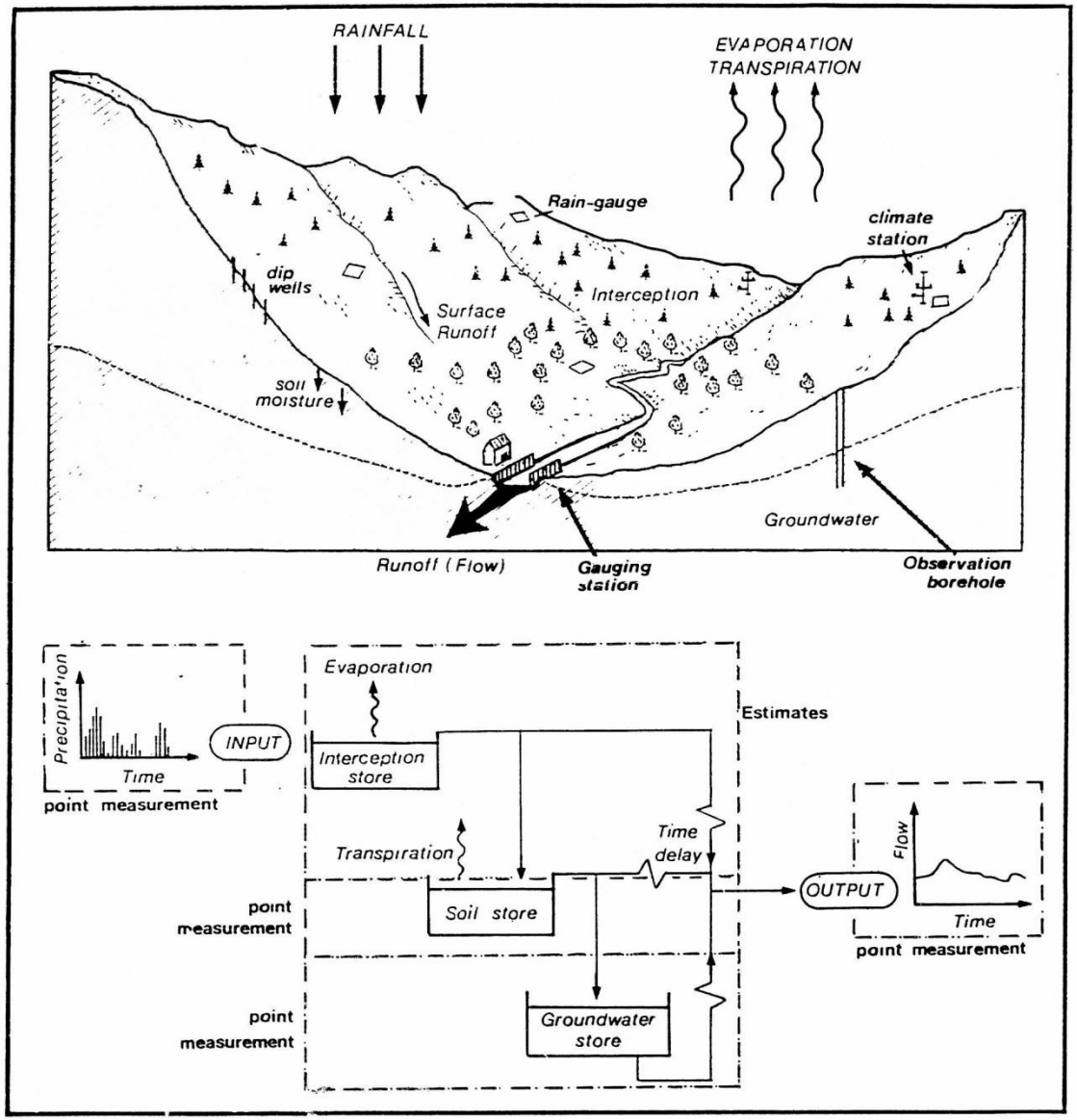
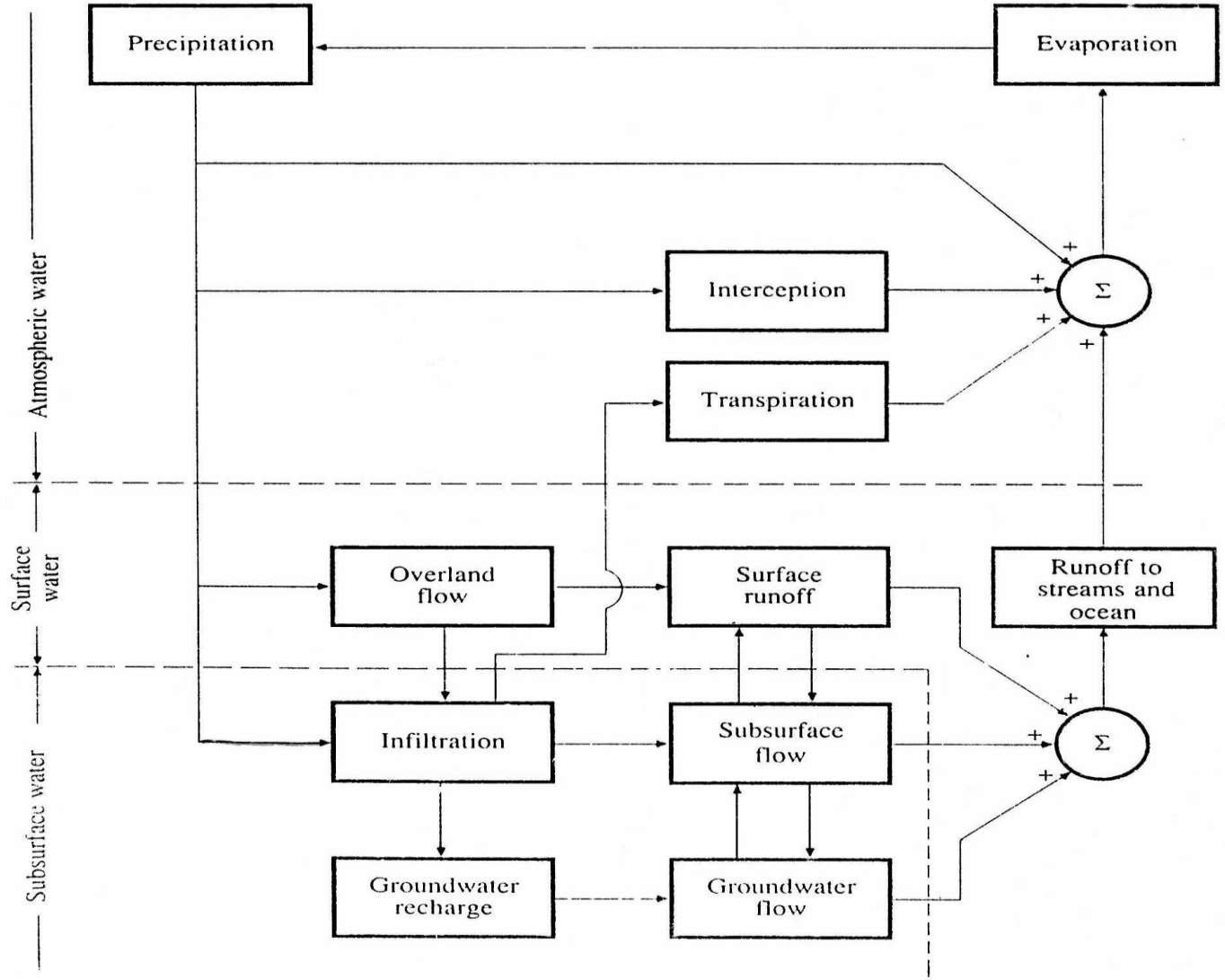

100
Precipitation on land
39
Moisture over land
385
Precipitation
on ocean
61
Evaporation from land
Surface
runoff
Evaporation and
evapotranspiration
Infiltration
Soil
moisture
424
Evaporation from ocean
Subsurface
flow
Water
table
Impervious
strata
38 Surface outflow
Groundwater flow
1 Groundwater
outflow

Fig. 2.2. The catchment hydrological cycle displayed as a landscape view and as a series of 'tank' stores which route an input precipitation through to a river flow (shown as time series). An emphasis is put on measurements in the cycle.




Precipitation
Evaporation
Atmospheric water
Interception
Transpiration
Σ
Surface water
Overland flow
Surface runoff
Runoff to streams and ocean
Infiltration
Subsurface flow
Subsurface water
Groundwater recharge
Groundwater flow

Weather hydrology (Meteorology)

The Atmosphere

1. dry air
   - Nitrogen (N_2) (78.09%)
   - Oxygen (O) (20.95%|)
   - Argon (Ar) (0.93%)
   - Carbon – dioxide (Co_2) (0.03%)
2. water vapor
3. impurities

Atmospheric Circulation

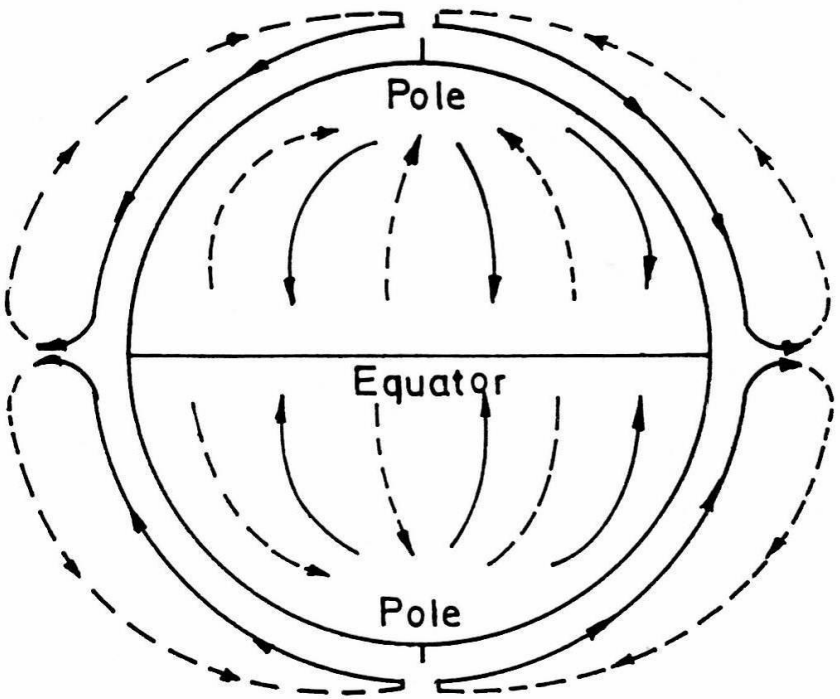
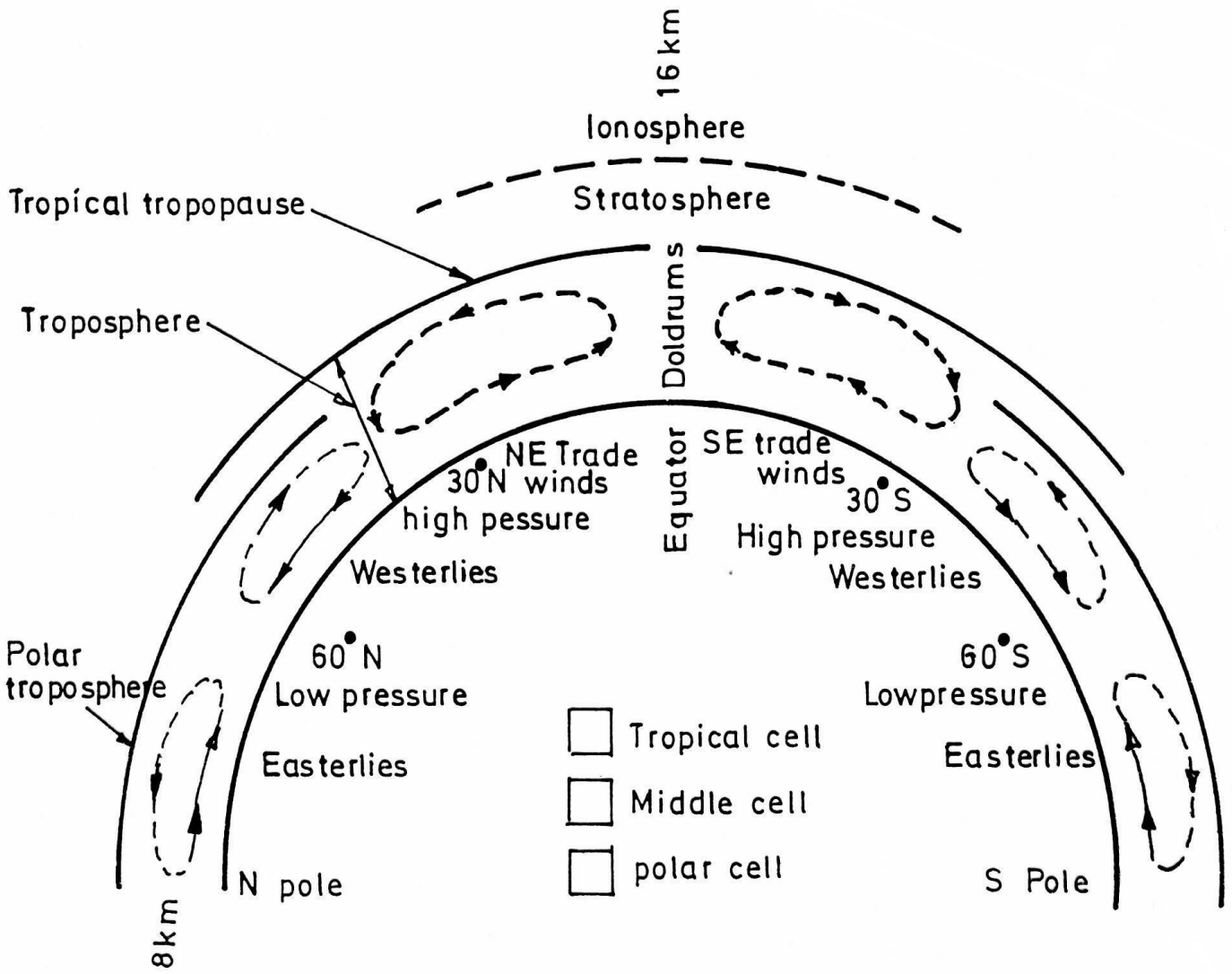


Figure Hadley Circulation


16 km
Ionosphere
Stratosphere
Tropical tropopause
Troposphere
Doldrums
Equator
NE Trade winds
30°N
high pessure
Westerlies
SE trade winds
30°S
High pressure
Westerlies
Polar troposphere
60°N
Low pressure
Easterlies
60°S
Lowpressure
Easterlies
Tropical cell
Middle cell
polar cell
N pole
S Pole
8km