structure or functioning of an ecosystem. It is also essential that measurements be compatible with system analysis. A number of methodology handbooks have been sponsored by the IBP and should be consulted for guidance on achieving optimum comparability. These are briefly described in IBP NEWS issues. Seven issues have been prepared to date, and may be obtained by writing to the IBP Central Office, 7 Marylebone Road, London, N.W.1. IBP NEWS Numbers 3, 4 and 7 are particularly relevant.

It is expected that a large instrumentation program will be required at each of the major research centers. Consequently it is desirable that these measurements be recorded on punch or magnetic tape for direct computer analysis. Where possible, instrumentation for the contributory studies should provide data that are comparable with the data obtained by the major research centers.

Outline of Variables

I. Physical measurements

A. Water budget

1. Precipitation
2. Soil moisture gradient
3. Evapotranspiration
4. Surface runoff and ground water

B. Radiation budget

1. Solar and thermal radiation
   a. Incoming and outgoing: quantity, quality
   b. Distribution: spatial, organism
2. Ionizing radiation
   a. Quantity
   b. Spectra

C. Heat flow and temperatures

1. Spatial distribution (atmospheric, aquatic, substrate)
2. Organism

D. Currents (air, rivers, lakes)

1. Spatial distribution
2. Organism