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Purpose of Measurements in Fluid Mechanics

1. Monitoring and control of processes
2. Source of scientific knowledge
 - Solution of mathematical equations through analogies
e.g. potential flow through an electric analogy.
 - General empirical relations can be established, especially where no theory is available
e.g. friction factors in piping components
 - To establish empirical 'laws' governing certain processes
e.g. characteristic curve for a ventilator, thermal efficiency of a gas turbine
 - Scale model studies
 - Research: accumulation of basic knowledge prior to postulation of new theories e.g. turbulence research
 - Validity of a theory can be tested (e.g. theory may contain simplifications), improvement of an existing theory
 - Verification of computational results

Validation – were the correct equations solved?

Verification – were the equations solved correctly?