

Operational Laws



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- What is an Operational Law?
 1. Utilization Law
 2. Forced Flow Law
 3. Little's Law
 4. General Response Time Law
 5. Interactive Response Time Law
 6. Bottleneck Analysis

Operational Laws

- Relationships that do not require any assumptions about the distribution of service times or inter-arrival times.
- Identified originally by Buzen (1976) and later extended by Denning and Buzen (1978).
- **Operational** \Rightarrow Directly measured.
- **Operationally testable assumptions**
 - \Rightarrow assumptions that can be verified by measurements.
 - For example, whether number of arrivals is equal to the number of completions?
 - This assumption, called job flow balance, is operationally testable.
 - A set of observed service times is or is not a sequence of independent random variables is not operationally testable.