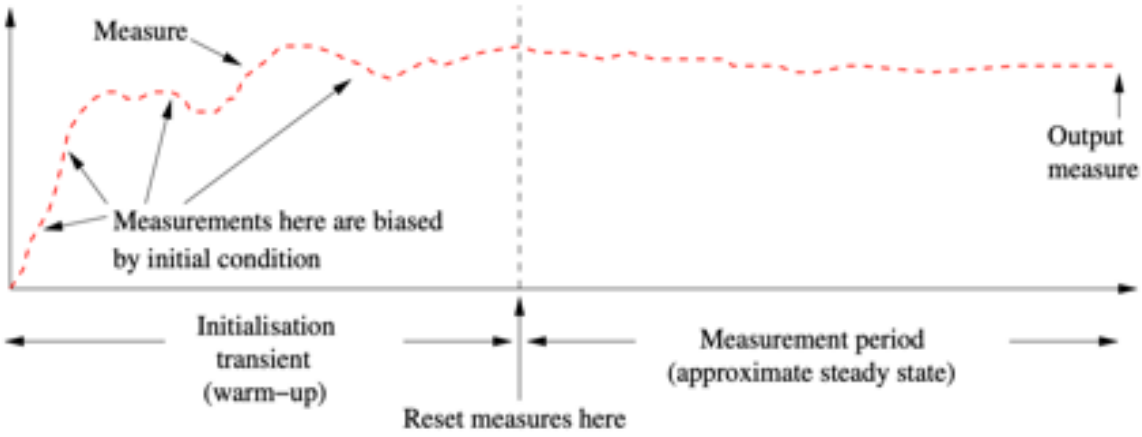
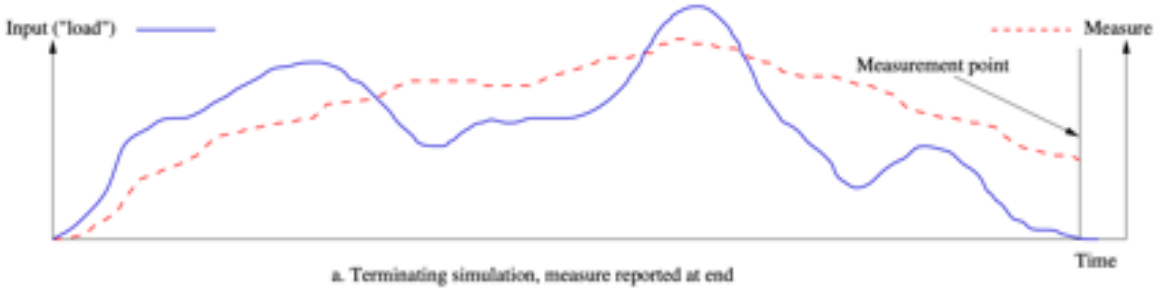
Output Analysis

A **non-terminating simulation**, seeks to model a system at "equilibrium", a.k.a. "in steady state", where $p_s(t) \rightarrow p_s$ as $\rightarrow \infty$.



A **terminating simulation** models a system over a specified period during which there is no notion of equilibrium, e.g.



Equilibrium output analysis: We focus on non-terminating simulations.

Assume we are using simulation to estimate some "long-run" performance measure, e.g. mean population, mean response time, resource utilisation, etc.

The **initial state** is typically fixed (e.g. all queues empty), so the initial state probability distribution is different to the distribution after some time t >> 0, say, and measures take time to settle.

To avoid initialisation bias we must either:

1. Discard the initialisation transient by **resetting** the measured after some "warm-up" time has elapsed.
2. Measure for "long enough" to render any bias insignificant.