# Architecting System Performance; Robust Performance

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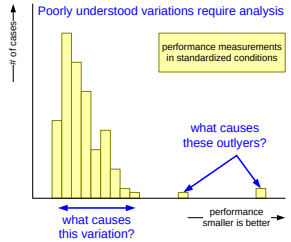
## Abstract

Performance should be robust. The performance should be reproducable and it should be well-behaving in extreme conditions.



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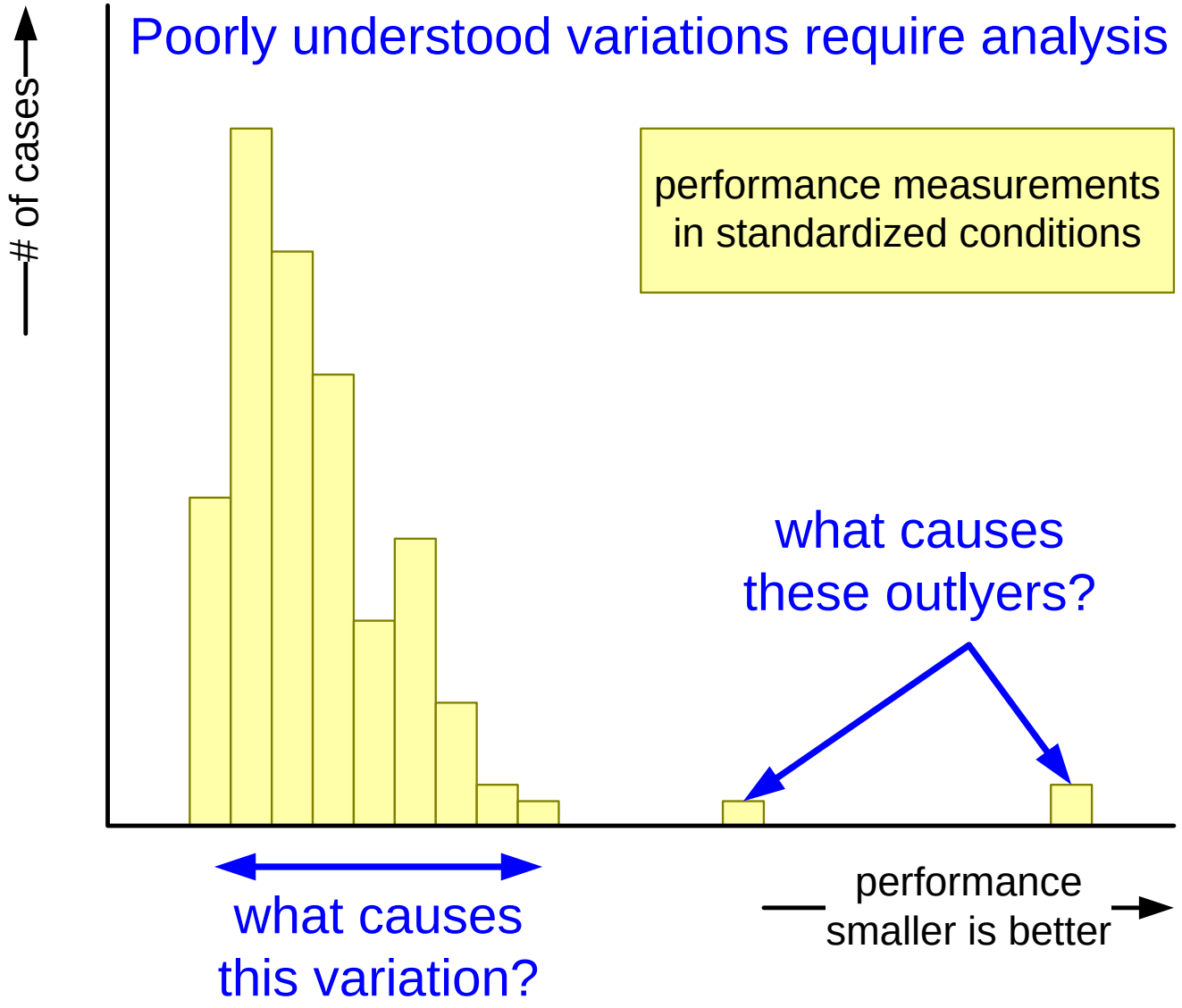
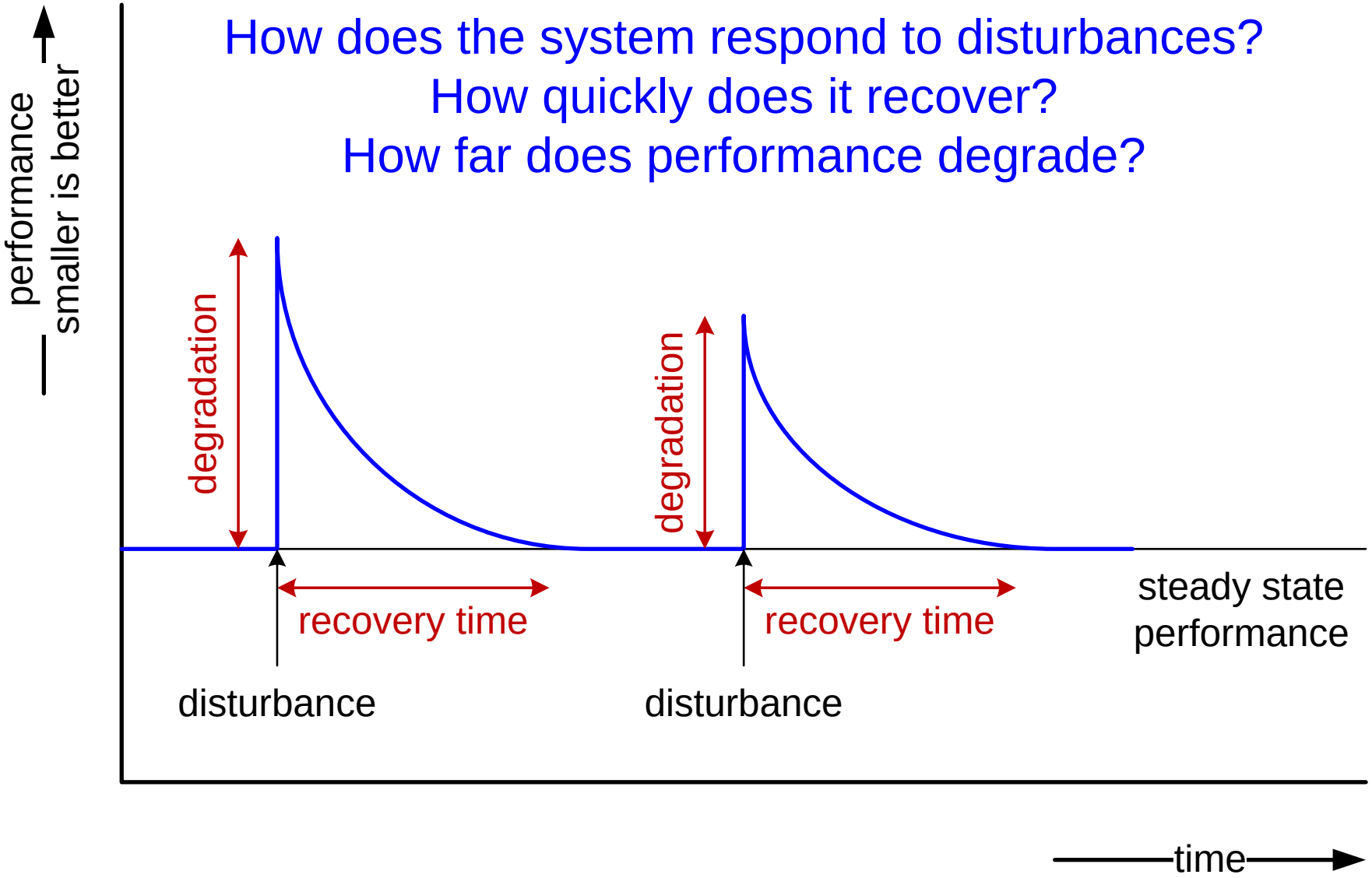
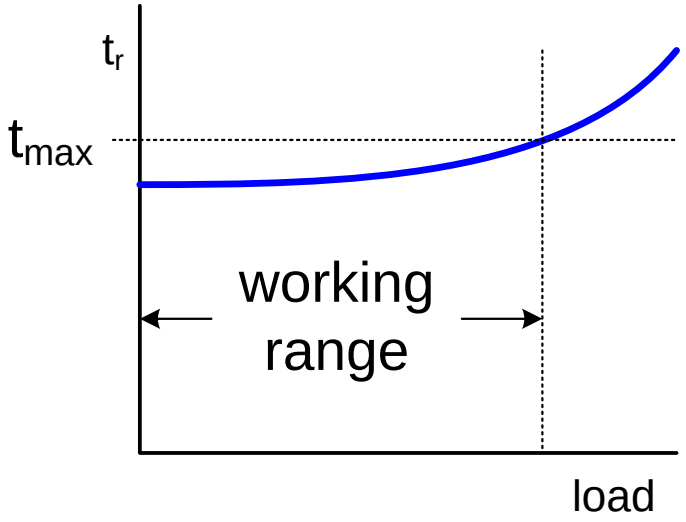
# Variations are Suspect

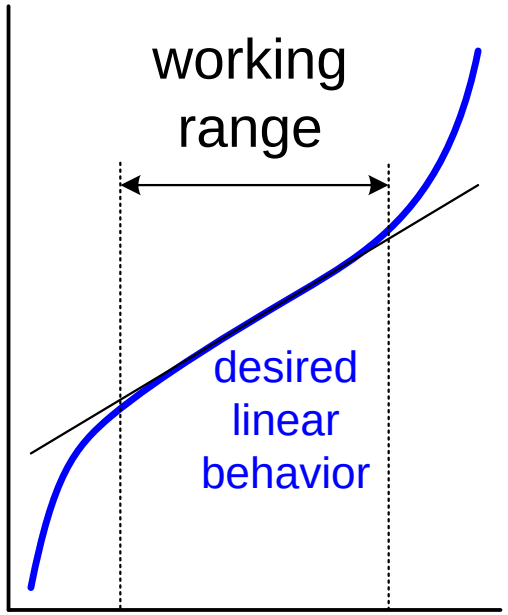


# Coping with Disturbances



# Measure to Validate Working Range




A system design assumption is often:
the performance of this function
{ is constant | is linear | doesn't exceed x | ...}

The working range is the interval where this assumption holds

# Validate Understanding of System Performance

| | |
|---|---|
| Characterize the system | use the system in varying conditions<br>measure performance<br>as function of the conditions |
| Stress testing | where does the design fail?<br>(go beyond specified limits) |
| Load testing | keep the system in heavy load condition<br>observe how it keeps performing<br>measure variations |
| (Accelerated) Lifetime testing | age the system<br>observe how it keeps performing |