

Physics-based Intelligent Diagnostics for High-Tech Systems

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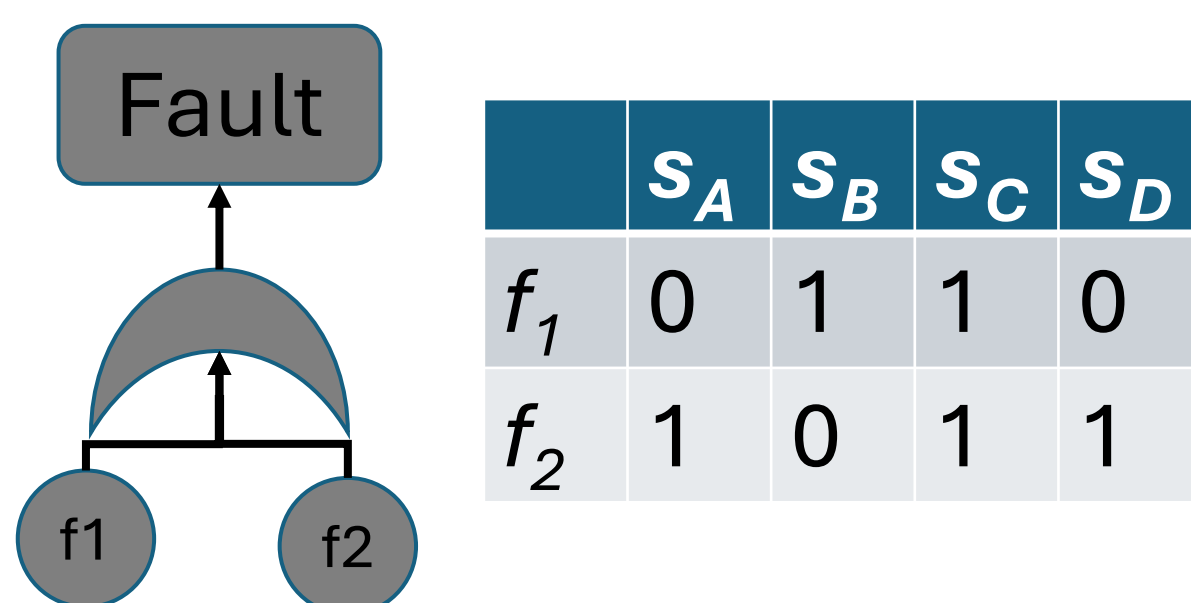
Physics-based diagnostics & prognostics



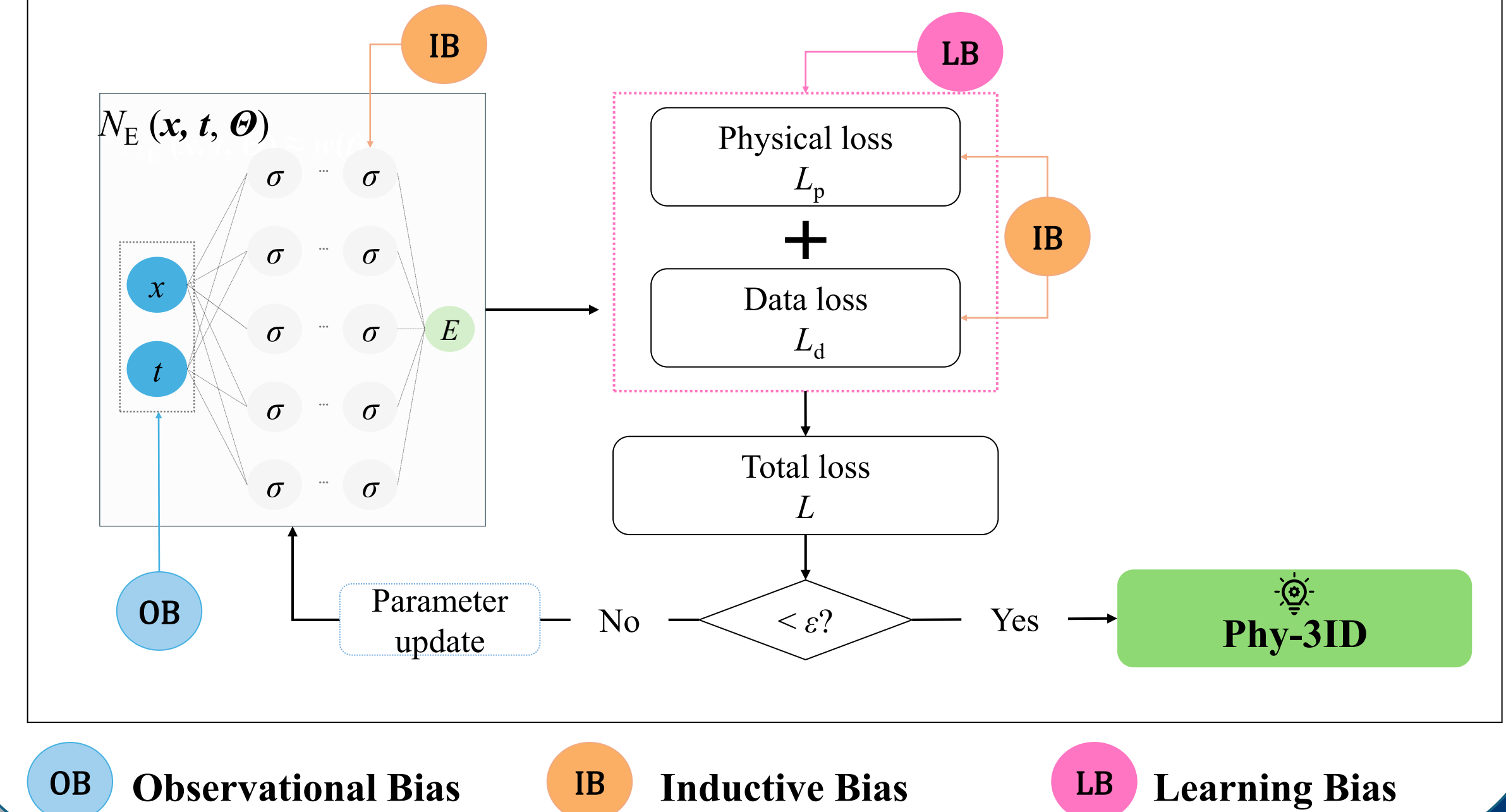
Sensor System → Signal Processing
Physics-based Models → Interpretation

Example: Pump system, 2 motor, 2 pumps.
Controlled system faults

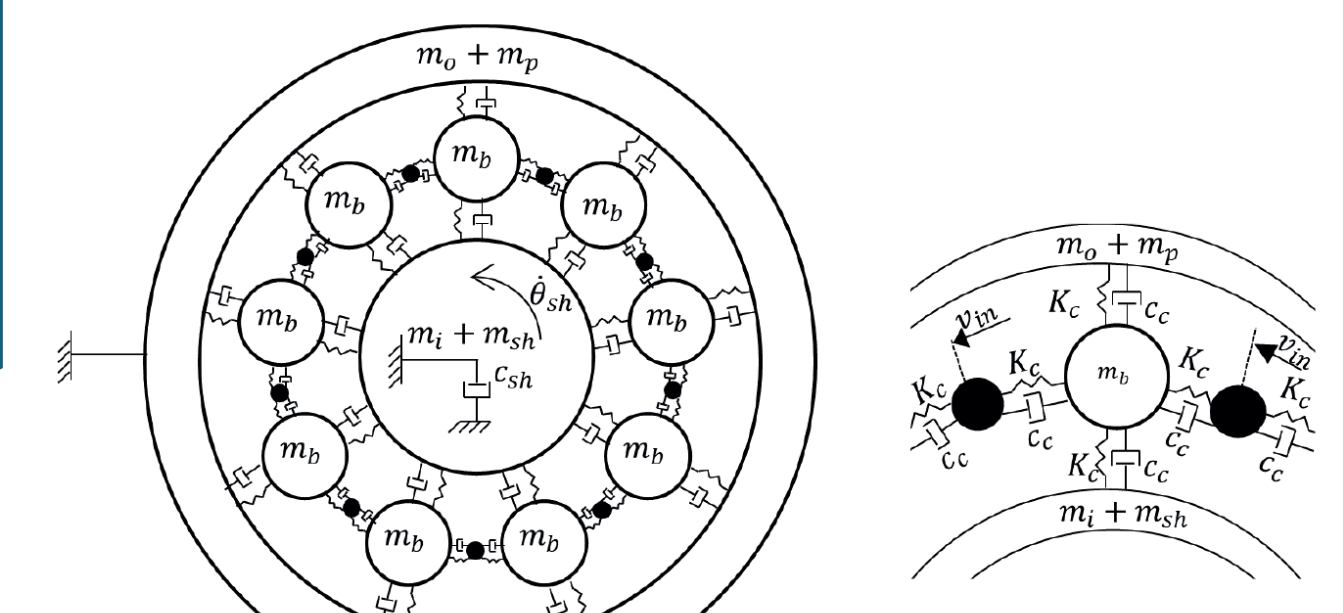
Fault Tree & Fault Signature analysis to find root cause of failures in systems



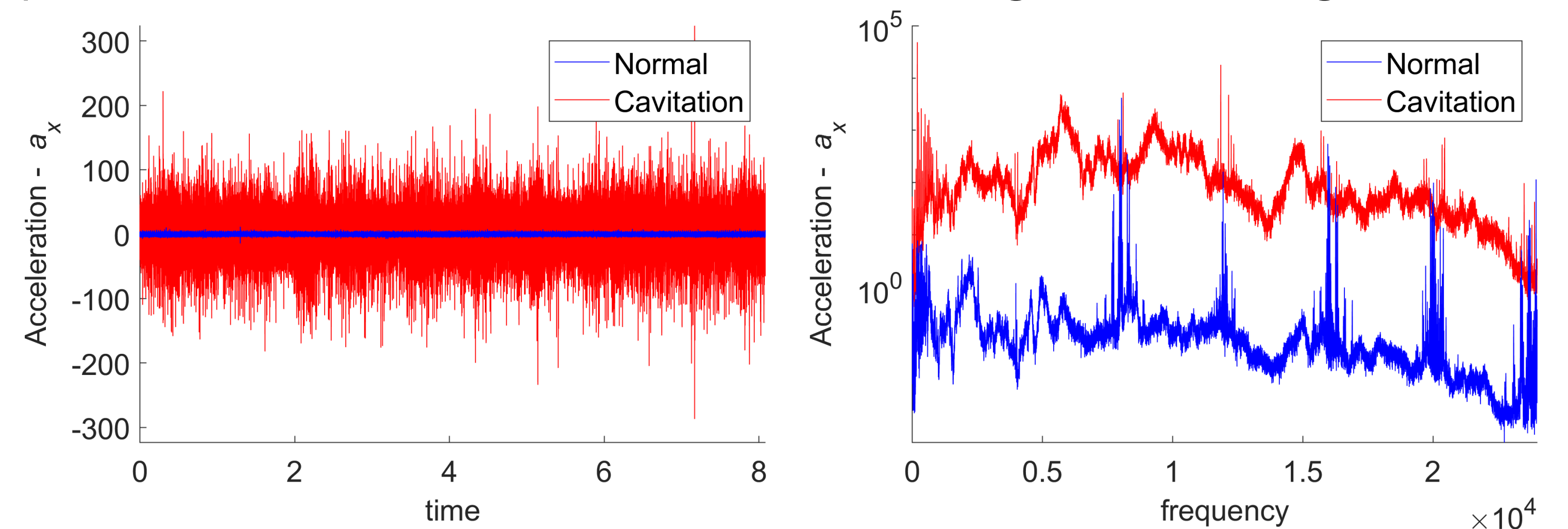
Physics-Informed Impact Identification (Phy-3ID)



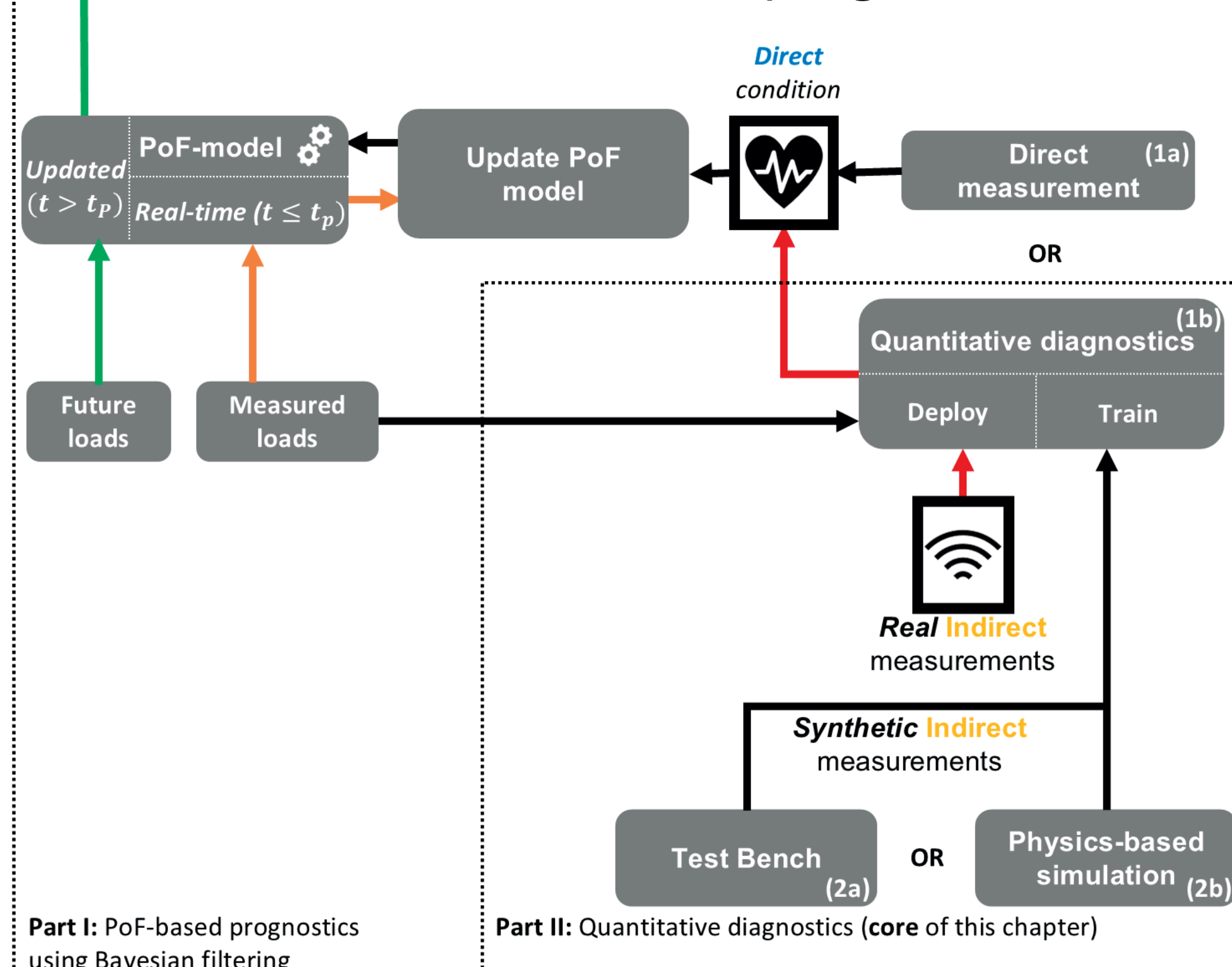
Physic-based models of system /system components



Sensor signals in time and transferred to frequency domain, revealing operational conditions and faults; understanding features of signal



Using Data and Physic-based models for prognostics



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