



# ***Optimal Multi-type Component Reassignment Design Under Internal Degradation and External Shocks***

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**Seminar Link:**

<https://cityu.zoom.us/j/94724238210>

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## **Abstract**

This paper investigates the multi-type component reassignment problem (MCRP) in consideration of internal degradation and external shocks. First, the hybrid shock arrival model with Wiener process distributed internal degeneration path is demonstrated. Then, we propose a unification method that converts the hybrid shock model into an equivalent single shock model by introducing the concept of statistical virtual shock. To dynamically maximize the system reliability, we construct the optimization model to determine the reassignment time and strategy. The case study verifies the power of reassignment as well as the efficiency of the proposed unification algorithm.

## **About the Speaker**

Jingzhe Lei is a PhD student in the ADSE department at City University of Hong Kong. She was admitted to the degree of Bachelor of Natural Science in Mathematics and Applied Mathematics at University of Science and Technology of China in 2021. Her research interest is centered around reliability analysis, reliability design and applied statistics.