A Two-Phase Software Reliability Modeling Involving with Software Fault Dependency and Imperfect Fault Removal

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Highlights

- Incorporate software fault dependency in NHPP (Non-homogeneous Poisson process) software reliability model.
- Incorporate imperfect fault removal for the realistic consideration.
- Propose two types of software faults, Type I (independent) fault and Type II (dependent) fault. Accordingly, two phases, Phase I and Phase II debugging process are proposed based on different fault type.
- The illustration of the model effectiveness is based on three datasets collected from industries. All three datasets demonstrate the proposed model has the best performance.