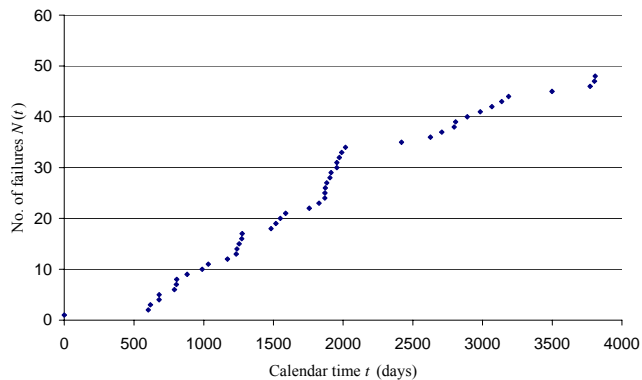**Journal of Quality in Maintenance Engineering (JQME)**
Paper reference number: JQME – R- 003
Title: Prediction of System Reliability for Single Component Repair
Authors: Yong Sun, Lin Ma, and Joseph Mathew

Figures and Tables

Figure 1. Number of failures $N(t)$ of a pump
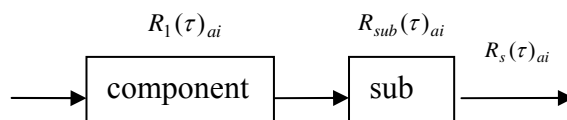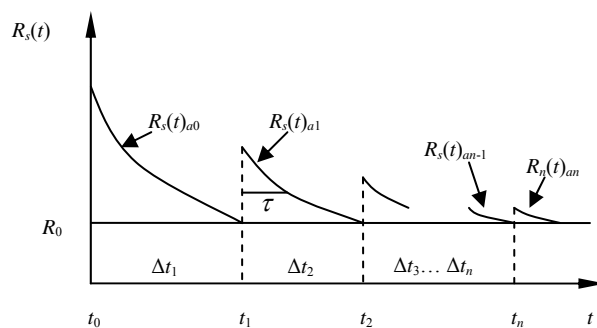system versus its age

Figure 2. Series system

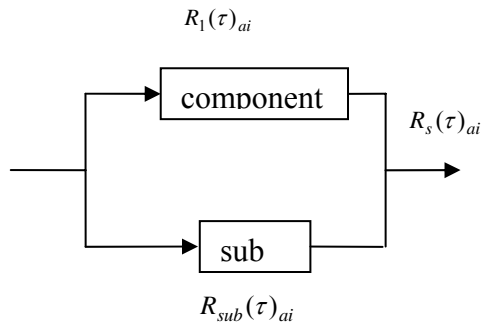Figure 3. Changes to the reliability
of an imperfectly repaired system
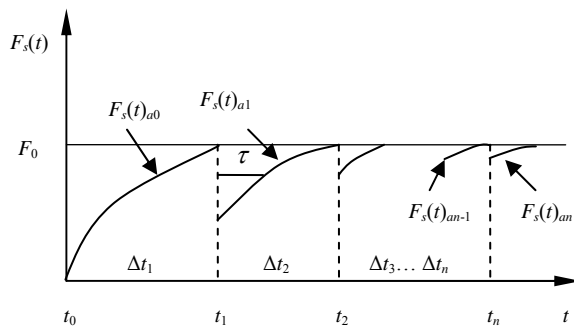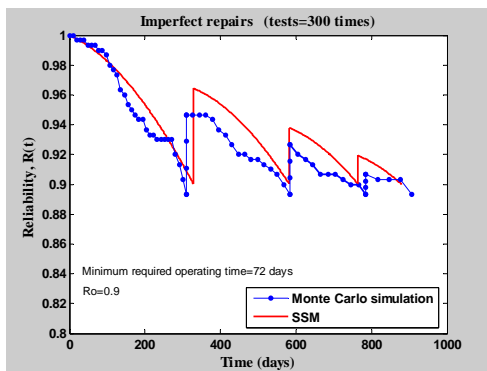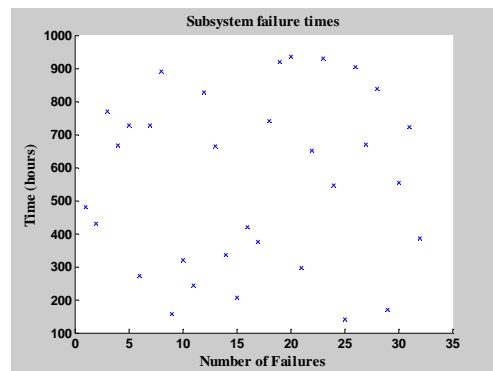
Figure 4. Parallel system

Figure 5. Changes of the failure distribution function of an imperfectly repaired system

(a)

(b)

Figure 6. An example of simulation experimental results: (a) the changes of the reliability of a system over its whole life cycle; (b) the failure times of the subsystem

Table I. The relationship between the spare parts N and the required minimum operational time t_p

t_p (days)	30	50	72	100	120	150	180
N	5	5	4	4	3	3	3

Table II. The times when the reliability of the system dropped to the minimum required reliability level R_0 after repairs

t_{SSM} (days)	328.8	582.7	764.8	875.8
t_{SIM} (days)	310	584.2	785.6	905.8
Error	6.06%	-0.26%	-2.65%	-3.31%