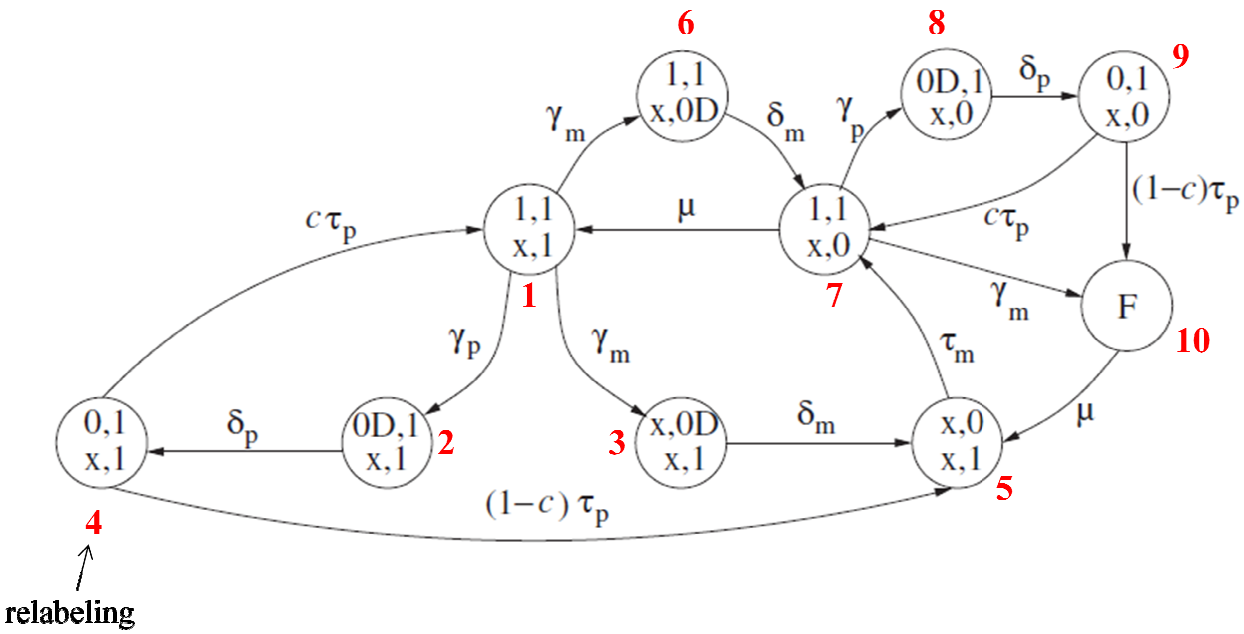

Fp ~ EXP(γp) time-to-failure of a process

Fm ~ EXP(γm) time-to-failure of a machine

Dp ~ EXP(δp) time-to-failure detection for a process

Dm ~ EXP(δm) time-to-failure detection for a machine

Sp ~ EXP(τm) start time of the process on the spare machine

Rp ~ EXP(τp) restart time of the process on the active machine

Cr ~ EXP(μ) recovery time of a crashed machine

c: coverage factor

Notation used for the state name:

$$\begin{pmatrix} \text{Pp , Pm} \\ \text{Sp , Sm} \end{pmatrix}$$

Pp and Pm denote the status of the primary server process and machine, respectively.

Sp and Sm denote the status of the spare server process and machine, respectively.

A status of “1” indicates that the process or machine is UP, a status of “0” indicates that the process or machine is DOWN.
“0D” indicates that the process or machine has failed, but the failure is yet to be detected.
A status of “x” indicates that the status is of no consequence (don’t care) and is used to indicate the status of the server process on the spare machine.