

Build the Markov chain for evaluating the reliability, the steady state availability and the safety of a system composed of three CPU working in parallel and whose output is given by a voter. Assume that components fail according to an exponential distribution with rates equal to  $\lambda_{CPU}$  and  $\lambda_{VOTER}$ , respectively. The repair rate is equal to  $\mu$  for each component and it is independent of the number of faulty components of the same type. The covering factors are:

- $C_{CPU-F}$ , in the case of cpu failure,
- $C_{CPU-R}$ , in the case of cpu repair,
- $C_{VOTER-F}$ , in the case of cpu failure,
- $C_{VOTER-R}$ , in the case of cpu repair.

Assume that the system is turned off in the case of failure.

