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Consider a job shop that is modelled as an open queueing network of the Jackson(1957) type. All work stations in the shop have the same number of parallel servers. Two problems are studied : the loading of stations and the assignment of servers, which are represented by loading and assingment vectors, respectively. Majorization and arrangement orderings are established to order, respectively, the loading and the assignment vectors. It is shown that reducing the loading vector under majorization or increasing the assignment vector under arrangement ordering will reduce the congestion in the shop in terms of reducing the total number of jobs(in the sense of likelihood ratio ordering), the maximum queue length(in the sense of stochastic ordering), and the queue-length vector(in the sense of stochastic majorization). The results can be used to supprot production planning in certain job shops, and to aid the desing of storage capacity.
(OPEN QUEUEING NETWORK; MAJORIZATION; ARRANGEMENT ORDERING; LIKELIHOOD RATIO ORDERING; STOCHASTIC ORDERING)