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**Large production line optimization using simulated annealing.** (English) Zbl 0944.90518  
*Int. J. Prod. Res.* 38, No. 3, 509-541 (2000).

Summary: We present a robust generalized queuing network algorithm as an evaluative procedure for optimizing production line configurations using simulated annealing. We compare the results obtained with our algorithm to those of other studies and find some interesting similarities but also striking differences between them in the allocation of buffers, numbers of servers, and their service rates. While context dependent, these patterns of allocation are one of the most important insights which emerge in solving very long production lines. The patterns, however, are often counter-intuitive, which underscores the difficulty of the problem we address. The most interesting feature of our optimization procedure is its bounded execution time, which makes it viable for optimizing very long production line configurations. Based on the bounded execution time property, we have optimized configurations of up to 60 stations with 120 buffers and servers in less than five hours of CPU time.

**MSC:**

[90B30](#) Production models

Cited in 11 Documents

**Full Text:** [DOI](#)