Radar Pulse Interleaving For Multi-Target Tracking

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Summary

In a multifunction radar, the maximum number of targets that can be managed or tracked is an important performance measure. Interleaving algorithms developed to operate radars exploit the dead-times between the transmitted and the received pulses to allocate new tracking tasks that might involve transmitting or receiving pulses, thus increasing the capacity of the system. The problem of interleaving N targets involves a search among N! possibilities, and suboptimal solutions are usually employed to satisfy the real-time constraints of the radar system. In this paper, we present new tight 0-1 integer programming models for the radar pulse interleaving problem and develop effective solution methods based on Lagrangian relaxation techniques. (C) 2003 Wiley Periodicals, Inc.

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