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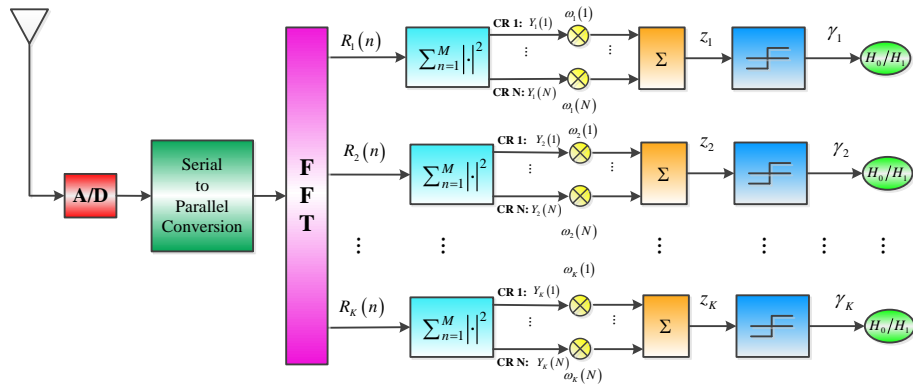
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## Graphical abstract



multiband joint detection for wideband spectrum sensing in cognitive radio systems.

## Highlights

- A comprehensive description of the current research state on the multiband cooperative spectrum sensing has been provided, on the basis of which, multiband cooperative spectrum sensing problem in cognitive radio system has been investigated to maximize the aggregate throughput by jointly optimizing weight coefficients and decision threshold.
- Due to the non-convex characteristics of the multiband cooperative spectrum sensing problem, a modified artificial bee colony (MABC) algorithm is proposed to address this problem, in which some improved mechanisms, such as mutation and crossover factors are introduced in ABC to enhance the diversity and improve the searching ability.
- The non-convex characteristics of the optimization problem, the motivation of employing MABC in addressing the optimization problem, the principle, the application, the feasibility as well as the stability of MABC algorithm have been discussed.

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