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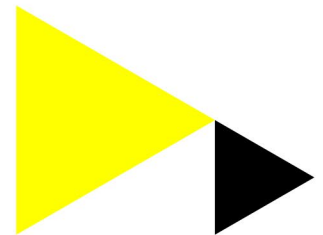
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Using optimization and simulation to improve the quality of the solution for the airport conflict
detection and resolution problem

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Abstract

In this work, the problem that has been tackled, involves the optimization of airport operations such as landing aircraft sequencing, runway operations, taxiway and terminals capacity loads, with the objective of avoiding ground congestion and ensuring a smooth flow of aircraft in the airspace. A methodology that combines optimization and simulation is proposed. In particular, simulation is employed for evaluating the objective function of a solution provided by an optimization model. By doing so, it is possible to assess the feasibility of the optimized solution. Furthermore, the methodology, iteratively applied, shows that it is possible to improve the quality of the solution.