

**Optimization of gate assignment minimizing passenger travel distance at
Japanese International airport**

TAKASHI HASUIKE*, DAIKICHI ITO
WASEDA UNIVERSITY, JAPAN
3-4-1 OKUBO, SHINJUKU, TOKYO 169-8555, JAPAN
THASUIKE@WASEDA.JP

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ABSTRACT. The gate assignment problem (GAP), which is to determine in advance which aircraft should be assigned to which gate or parking area in daily airport operations, is often discussed due to the rapid growth of aviation demand in recent years. In this study, we focus on the viewpoints of passengers, airports, and airlines, and treat the GAP of minimizing the total walking distance for all users and the number of aircrafts allocated to the parking lots at Haneda Airport Terminal 3, and also verify the characteristics of Haneda Airport Terminal 3. The experimental results show that the convenience of users and the efficiency of ground operations are improved. In addition, it is shown that the number of transfer passengers does not have much effect on the gate allocation at Haneda Airport Terminal 3 due to the fact that passengers must pass through the security checkpoint when transferring to another terminal.