

# Model Generalization in Arrival Runway Occupancy Time Prediction by Feature Equivalences

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Abstract— General real-time runway occupancy time prediction modelling for multiple airports is a current research gap. An attempt to generalize a real-time prediction model for Arrival Runway Occupancy Time (AROT) is presented in this paper by substituting categorical features by their numerical equivalences. Three days of data, collected from Saab Sensis' Aerobahn system at three US airports, has been used for this work. Three tree-based machine learning algorithms: Decision Tree, Random Forest and Gradient Boosting are used to assess the generalizability of the model using numerical equivalent features. We have shown that the model trained on numerical equivalent features not only have performances at least on par with models trained on categorical features but also can make predictions on unseen data from other airports.