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Titel des Beitrags: Touchdown Point Detection for Operational Flight Data using Quality Measures and a Model Based Approach

Abstract: Airlines utilize operational flight data recorded by a Quick Access Recorder (QAR) to analyze the operation of their aircraft with the intend to detect safety issues. For the analysis safety performance indicators are determined which often depend on detected time points such as the touchdown. The touchdown is a crucial time point for the risk evaluation of the landing phase of a flight. This paper presents two algorithms for the detection of the touchdown with the attempt to be as accurate as the recording frequency of accelerations allows. The first algorithm is based on commonly known approaches combined with a set of quality measures evaluating the reliability of the detected time point. The second algorithm is a novel model based approach comparing measured and modelled behavior of the recorded body fixed vertical and longitudinal acceleration. The majority of detected touchdowns of both algorithms lies in a time interval of less than 0.25 seconds.

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