Motivation
Roundabout capacity analysis in Portugal is based on the UK regression method. This method has some limitations, which has recently motivated research in Portugal into the use of capacity methods based on gap-acceptance theory.

Objectives
- Estimation of critical and follow-up headways at Portuguese roundabouts
- Comparison of the main estimation methods
- Comparison with results from other countries

Data collection
- Methodology consistent with the NCHRP Report 572
- Based on video recordings
- 6 roundabouts in Portugal with
  - Periods of continuous queuing
  - Simple operations
  - Standard geometric design
- Observation time: 53 – 99 minutes per entry
- Data conversion: LUT\textsuperscript{1\textsubscript{WU}} tool and Excel VBA

Estimation methods
- Siegloch, Raff, Wu, Troutbeck (ML), Logit

Validation
- Comparison of observed and predicted capacities using Haring’s capacity formula (generalization of Tanner’s model)

Main conclusions
- Siegloch’s estimates are very dependent of the move-up time threshold used to classify the saturation periods;
- Maximum Likelihood method overestimates the critical headway when the opposing flows are very low;
- Wu and ML methods produce very similar estimates;
- The Logit method allows the explicit use of independent variables other than the headway; the waiting time at the stop bar was not statistically significant;
- The critical headway is usually smaller at the right-lane entry;
- Portuguese (and Spanish) drivers are more aggressive than northern/eastern European drivers;
- The comparison between estimated and observed capacities suggests that Raff, Wu and Troutbeck methods are the more reliable.