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Evaluation and Field Implementation of the Fuzzy Logic Based Ramp Metering Algorithm ACCEZZ

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Abstract: Ramp metering has proven to be one of the most direct and effective control measures to overcome temporary disturbances on motorway traffic flow and to help reach an improved utilization of motorway infrastructure. The ACCEZZ ramp metering algorithm is an adaptive control approach based on Fuzzy Logic. Results from its calibration and validation as well as its evaluation using a microscopic simulation show how different control strategies can improve traffic conditions especially during the peak hours. To evaluate the potential of ramp metering the ramp metering software TRANSRAMP has been developed, implemented and tested at a demonstration site in Munich (Germany). Since December 1st, 2005 TRANSRAMP controls traffic at two consecutive on ramps successfully with the ACCEZZ algorithm. Data for a cross-algorithm (with ALINEA) and a cross-site evaluation will be collected at A94 until May 2006 within the European research project EURAMP.