

EXPERIMENTS WITH INVERSE-DISPERSION MODELLING

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Abstract: An extensive experience with the concentration prediction in the lee of various sources has been accumulated in the Czech Republic. In essence, there were provided no studies dealing with the reverse problem i.e. estimate of the source emission strength from the known meteorological conditions and measured concentration. These inversion-modelling techniques became actual in connection with the problems of odour annoyance and estimates of ammonia emissions from agricultural sources.

Some inverse-modelling approaches found in the literature and freely available software were tested using published unique data set from the tracer field experiment. Exploiting the ammonia concentration data and odour concentrations, gathered during the measurement campaign in the vicinity of the pig farm in eastern Bohemia, an attempt to estimate odour and ammonia emission rate has been made and validity of obtained results has been estimated.