



EC-Frame – a versatile eddy-covariance software based on EC-PACK

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The software presented encompasses a eddy-covariance calculation scheme which is a fork of the well-known EC-PACK and a quality control and assessment (QC/QA) scheme developed in course of the German TERENO project.

EC-PACK was originally developed at the Dutch weather service (KNMI) and the universities of Utrecht and Wageningen and is one of the most well established eddy-covariance softwares. It follows the approach of Lenschow et al. (1994) to assign an error value to each flux value calculated. The process QC/QA scheme incorporates the calculation of error flags after Vickers & Mahrt, quality classes after Foken & Wichura, a few other QC tests, assessment of the original ECPACK errors (van Dyke, 1992), calculation errors after Finkelstein & Sims (2001), as well as target area matching algorithm, currently using the footprint model (Kormann & Meixner, 2001).

All tests can be individually enabled or disabled and even reconfigured by the user, if desired. The classification of the output, depending on the QC test results, is also fully configurable by the user. Extensive comparisons show that EC-Frame delivers results that are in accord with other major eddy-covariance software packages (e.g. TK3). Since the code of the most time consuming tasks has been parallelized, the time needed to process huge amounts of data has been significantly reduced. For the ease of use, an easy-to-use setup front end is currently under development.