PACT (Precipitation Analysis and Conversion Tool)

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Introduction

The developed PACT is able to facilitate the required parameters for the climate input file of the WEPP model (Nearing et al., 1990) by disaggregating storms, compiling data from different sensors or data sources and integrating all these data within one single workflow.

Materials and Methods
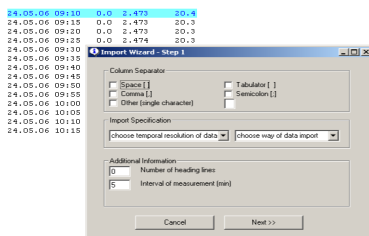
The raw measurement data are imported by using an import wizard (Fig.1) that guides the user through the whole import procedure. All necessary import settings are easily specified according to the required boundary conditions of the data import.

Figure 1. Import wizard

Figure 2. Finalized data import

Precipitation, duration, time to peak and intensity to peak are calculated from import data with high temporal resolution (Fig.3) by triggering the analysis routine (Fig.4). The user is offered either to proceed with adding missing parameters from different data sources or sensors to the disaggregated result (Fig.5a) or adding parameters for the missing days in the measurement record (Fig.5b).
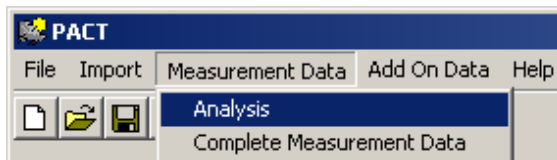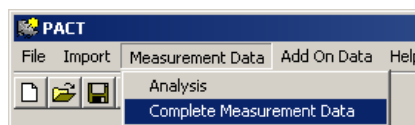

Figure 3. Disaggregated storm

Figure 4. Analysis routine

Figure 5. Add-on data from different souces for the measurement record (left) or for missing days in measurement period (right)

In either case the result is the generated WEPP climate input file. The difference between both cases is that in one case the inputfile consists exclusively of completed measurement data in the second case the input consists of completed measurement data and the insertion of all specified parameters for missing days in the measurement record.

Figure 7. Generated WEPP climate input file

Conclusion

- => **PACT automates the climate input file creation for the WEPP model**
- => **PACT reduces the required time compared to manual approach**
- => **PACT offers the possibility to merge data from different sensors and data sources into one input file**
- => **PACT provides a user friendly interface for data processing**