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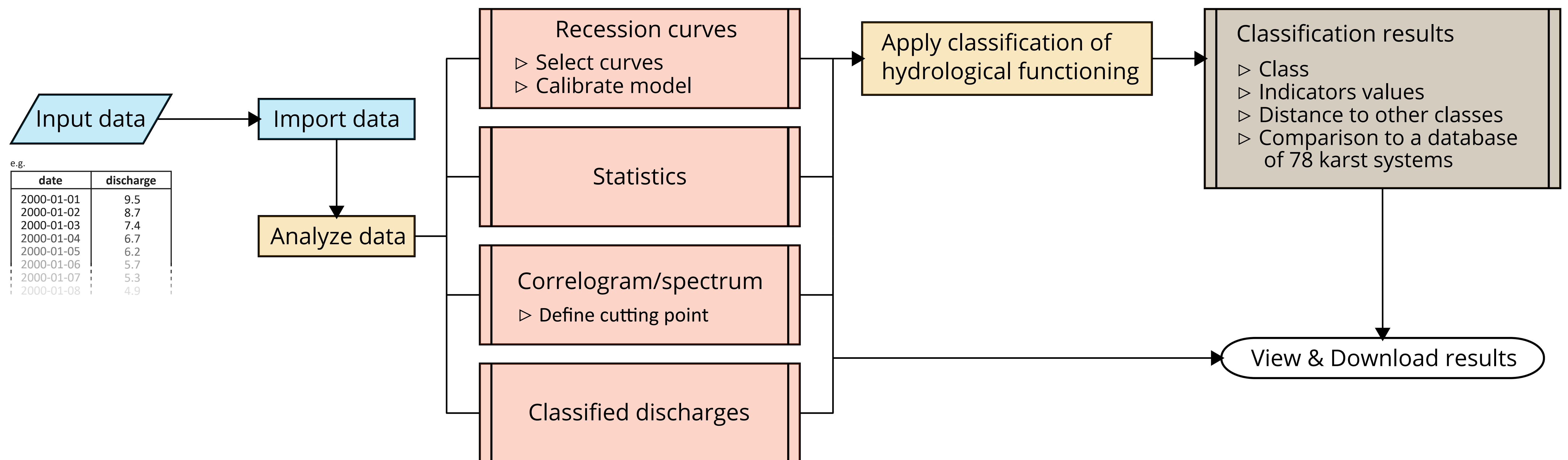
KarstID: An interactive R application for karst spring hydrograph analysis that also provides a classification of karst hydrological functioning

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Features

KarstID provides the user a toolbox to analyse karst spring discharge time series and characterize karst systems hydrological functioning. The application supports statistical, recession curves, classified discharges and signal (correlational and spectral) analyses. The completion of the analyses are facilitated with the graphical interface.

The classification is based on the proposal of Cinkus et al. (2021), which use three indicators of functioning derived from Mangin's recession model (Mangin, 1975). The typology consists of 6 classes accounting for 3 aspects of karst systems hydrological functioning: the capacity of dynamic storage, the draining dynamic of the capacitive function and the variability of the hydrological functioning.

Data Import

Plain text or Excel file with two columns referring to date and discharge. Several features are available to minimize the pre-processing of the data. Detection of missing date entries and choice between hourly or daily mean. Option to perform a spline interpolation over missing discharge values.

Software Availability

KarstID is build with the R Shiny framework (Chang et al., 2021) and is embedded into an R package (R Core Team, 2021), which make the installation and launch easy even for non-programmers. It is also free, open-source and actively developed on a developer community platform.

num	start	end	breakpoint	k	i	alpha
1	2014-03-28	2014-10-10	62	0.40319004266115	0.875257777453824	0.00545315312178583
2	2016-05-14	2016-09-14	56	0.223629715328631	0.896845435241753	0.00454911892250461
3	2017-05-12	2017-11-19	57	0.20677577937598	0.895681512372722	0.00661638748327326

About KarstID

Developer Guillaume Cinkus
Contact guillaume.cinkus@umontpellier.fr
Code repository <https://github.com/busemorose/KarstID>

Software required R & Any browser
Program language R (version 4.0.0)
Package size 4.6 Mo

