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The R package 'Luminescence': a history of unexpected complexity and concepts to deal with it

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Overcoming limitations in the so far used standard software, developing an efficient solution of low weight for a very specific task or creating graphs of high quality: the reasons that may had initially lead a scientist to work with **R** are manifold. And as long as developed solutions, e.g., **R** scripts, are needed for personal use only, code can remain unstructured and a documentation is not compulsory. However, this changes with the first friendly request for help after the code has been reused by others. In contrast to single scripts, written without intention to ever get published, for **R** packages the CRAN policy demands a more structured and elaborated approach including a minimum of documentation. Nevertheless, growing projects with thousands of lines of code that need to be maintained can become overwhelming, in particular as researchers are not by definition experts on managing software projects.

The **R** package 'Luminescence' (Kreutzer et al., 2017), a collection of tools dealing with the analysis of luminescence data in a geoscientific, geochronological context, started as one single **R** script, but quickly evolved into a comprehensive solution connected with various other **R** packages. We present (1) a very brief development history of the package 'Luminescence', before we (2) sketch technical challenges encountered over time and solutions that have been found to deal with it by using various open source tools. Our presentation is considered as a collection of concepts and approaches to set up **R** projects in geosciences.

References

Kreutzer, S., Dietze, M., Burow, C., Fuchs, M. C., Schmidt, C., Fischer, M., Friedrich, J., 2017. Luminescence: Comprehensive Luminescence Dating Data Analysis. R package version 0.6.4. https://CRAN.R-project.org/package=Luminescence