

Reproducibility in cyclostratigraphy: initiating an intercomparison project

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The study of astronomical climate forcing and the application of cyclostratigraphy have experienced a spectacular growth over the last decades. In the field of cyclostratigraphy a broad range in methodological approaches exist. However, comparative study between the different approaches is lacking. Different cases demand different approaches, but with the growing importance of the field, questions arise about reproducibility, uncertainties and standardization of results. The radioisotopic dating community, in particular, has done far-reaching efforts to improve reproducibility and intercomparison of radioisotopic dates and their errors. To satisfy this need in cyclostratigraphy, we initiate a comparable framework for the community. The aims are to investigate and quantify reproducibility of, and uncertainties related to cyclostratigraphic studies and to provide a platform to discuss the merits and pitfalls of different methodologies, and their applicabilities.

With this poster, we ask the feedback from the community on how to design this comparative framework in a useful, meaningful and productive manner. In parallel, we would like to discuss how reproducibility should be tested and what uncertainties should stand for in cyclostratigraphy. On the other hand, we intend to trigger interest for a cyclostratigraphic intercomparison project. This intercomparison project would imply the analysis of artificial and genuine geological records by individual researchers. All participants would be free to determine their method of choice. However, a handful of criterions will be required for an outcome to be comparable. The different results would be compared (e.g. during a workshop or a special session), and the lessons learned from the comparison could potentially be reported in a review paper. The aim of an intercomparison project is not to rank the different methods according to their merits, but to get insight into which specific methods are most suitable for which specific problems, and obtain more information on different sources of uncertainty. As this intercomparison project should be supported by the broader cyclostratigraphic community, we open the floor for suggestions, ideas and practical remarks.