



## Scientific data processing of a fiber network for optical frequency transfer: methods and studies

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Coherent optical fiber links have in recent years led to many different applications, like long-distance optical clock comparisons [1], HR spectroscopy [2], geodesy and tests of special relativity [3]. This will be further enhanced by the French REFIMEVE+ project, where 20 partner laboratories from all around France with experts in different fields of physics will benefit from a metrological optical signal delivered through coherent fiber links. This growing network presents many opportunities; however, the signal needs to be properly evaluated.

Based on data from a number of stabilized fiber links in the REFIMEVE+ network we will present different methods used for scientific data processing. These have been implemented as part of a global supervision of the REFIMEVE+ network in order to validate the metrological signal. Furthermore, it is desired to evaluate the long-term behavior of a fiber link, where a challenge is to handle the holes that will evidently appear in the data [4]. We will present an analysis of how to handle these holes in post-processing. This will expand the scientific possibilities of the REFIMEVE+ fiber network, and will help push the limit of the performance of the state-of-the-art frequency transfer that is already seen in the French network.

### References

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