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PROGRAMME

TITLES

AUTHORS

PRESENTERS

PROGRAMME >

O-1139

## The Marboré Symphony: Music for the deglaciation and Holocene in the central Pyrenees

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### Abstract

Geological sequences have been used as the main basis for musical pieces both as inspiration for musicians and as raw materials (geochemical data, stratigraphic logs, cycles and frequencies) for compositions produced by computer programs. Telling our stories of Quaternary changes with music presents an opportunity to reach a wider audience and to integrate art and science. Here we present an example of how to compose music from Quaternary lake sequences and illustrate in a new way the main changes in the Pyrenean landscapes since deglaciation. The creation of this music was undertaken within the framework of the REPLIM project, an INTERREG- POCTEFA – project aimed to create a network of climate change observatories on lakes and wetlands in the Pyrenees. Based on the sediment sequence from Marboré Lake (42°41'44.27"N, 0° 2'24.07"E, 2612 m a.s.l.), we have selected lithological, compositional and pollen data (Leunda et al, 2017; Oliva et al., 2018) to represent the main changes in the lake and the region during the last 15000 years. To transform the geological data into musical notes, we have used a similar approach than in previous experiences (Simon et al, 2015) but in this case, notes were assigned to compositional range intervals and the tempos were defined using sediment accumulation rates. Different melodies and instruments were assigned at each data set: TOC and Br/Ti as lake bioproductivity, selected pollen data for vegetation dynamics in the valleys, Si/Ti as sediment influx and Pb/Ti as anthropogenic impact. An electronic version of the Marboré Symphony was created by computer software based on the raw data. The music group O'Carolan (<http://www.ocarolanfolk.com>) transformed the electronic version into a six minutes long acoustic version. The Symphony premiered in the town of Bielsa on December 14<sup>th</sup>, 2018. The Marboré music project has served to increase citizenship awareness about climate change in the Pyrenees and provided a new tool to better communicate past and future changes in the landscapes.

### References:

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