



20 Years of Speleothem Paleoluminescence Records of Environmental Changes

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The development and recent advances in the uses of speleothem luminescence as proxy records of environmental change (called paleoluminescence) is reviewed for the period since it was first introduced twenty years ago. It is demonstrated that speleothem paleoluminescence records have the potential to provide a broad range of important high-resolution paleoenvironmental proxy records (e.g. paleotemperature, solar insolation, solar luminosity, glacial- interglacial cycles, past precipitation, surface plant communities, paleosoils, advances of hydrothermal waters and chemical pollution).

It is demonstrated that speleothem luminescence records allow extremely high resolution and long duration of their paleoclimatic proxy records. Some speleothems can even be used as natural climatic stations for obtaining of quantitative proxy records of Holocene climate with annual resolution.