



Spectrophotometer analysis of Holocene sediment from an anoxic fjord: Saanich Inlet, British Columbia, Canada.

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A high resolution spectrophotometric study of Holocene sediments from core MD02-2490 in Saanich Inlet is used to test spectral-signal variability as an environmental/climatic proxy. Identification of the stratigraphic markers (Mazama Ash and Fraser River drainage) and recognition of two basin states (oxygenated and anoxic) in the spectral signal confirms its potential for paleoenvironmental reconstruction. Two spectral proxies are used: (1) the first derivative value at 675 nm as a proxy for organic matter variations, and (2) the colorimetric parameter b^* as an indicator of diatoms. In addition, we assess the effect of oxidation and decreasing water content on the sediment by comparing spectral measurements taken on board the ship, just after the cores were opened, to our shore-based laboratory measurements. For Saanich Inlet sediments, the oxidized color is more indicative of the degree of anoxia.