

## **Branched GDGTs as palaeoenvironmental proxies: Origin, application and limitations**

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Since their discovery in a Dutch peat in 2000 [1], branched glycerol dialkyl glycerol tetraethers (brGDGTs) are increasingly used for reconstruction of past temperature and pH using a wide variety of sedimentary archives such as loss deposits, palaeosoils, peat bogs, and lake and coastal oceanic sediments [2]. Proper application of brGDGTs requires extensive knowledge on their bacterial sources, on the biological adaptation of membrane composition to environmental parameters, on modes of transport in the environment, and on their complex chemical composition. In this presentation I will discuss recent developments in our assessment of the bacterial sources of brGDGTs based on work with bacterial cultures, evidence for in-situ production in lakes and coastal sediments, and their implications for the application of brGDGT as palaeoenvironmental proxies.

[1] Sinninghe Damsté *et al.* (2000) *Chem. Commun.* 1683-1684. [2] Schouten *et al.* (2014) *Org. Geochem.* **54**, 19–61.