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Methane release through sediment resuspension

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Sediment in shallow areas is frequently disturbed by wave action or bioturbation, resulting in sediment resuspension. In a microcosm study, the resuspension of sediment from the littoral zone of a large European lake was simulated. Sediment resuspension lead to variations in the methane flux over several orders of magnitude. Only a minor part (16%) of the methane released from the sediment was oxidized by methanotrophic bacteria, whereas the major part escaped into the water column. Hence, sediment resuspension events have to be taken into account for any calculations of the cumulative methane flux from shallow areas to the atmosphere. However, due to the irregularity of resuspension events, detailed in situ measurements of methane concentration in the sediment and precise determinations of the in situ methane concentration in the water column are essential in order to assess more precisely the duration and intensity of methane release during such events.