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*Supplement of*

**A model study of warming-induced phosphorus–oxygen  
feedbacks in open-ocean oxygen minimum zones  
on millennial timescales**

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## **Contents of this file**

Benthic burial, benthic release, O<sub>2</sub> concentration & ONPP

O<sub>2</sub> map in year 10,000

O<sub>2</sub> map in a depth of 900 m

## **5 Introduction**

The supplement provides one figure showing the global and annual mean phosphorus fluxes (benthic burial & benthic release), the oxygen concentration and the ocean net primary production. Figure S2 illustrates the oxygen concentration in year 10,000 for a depth of 300 m and 900 m, while the last figure shows the oxygen concentration in a depth of 900 m.

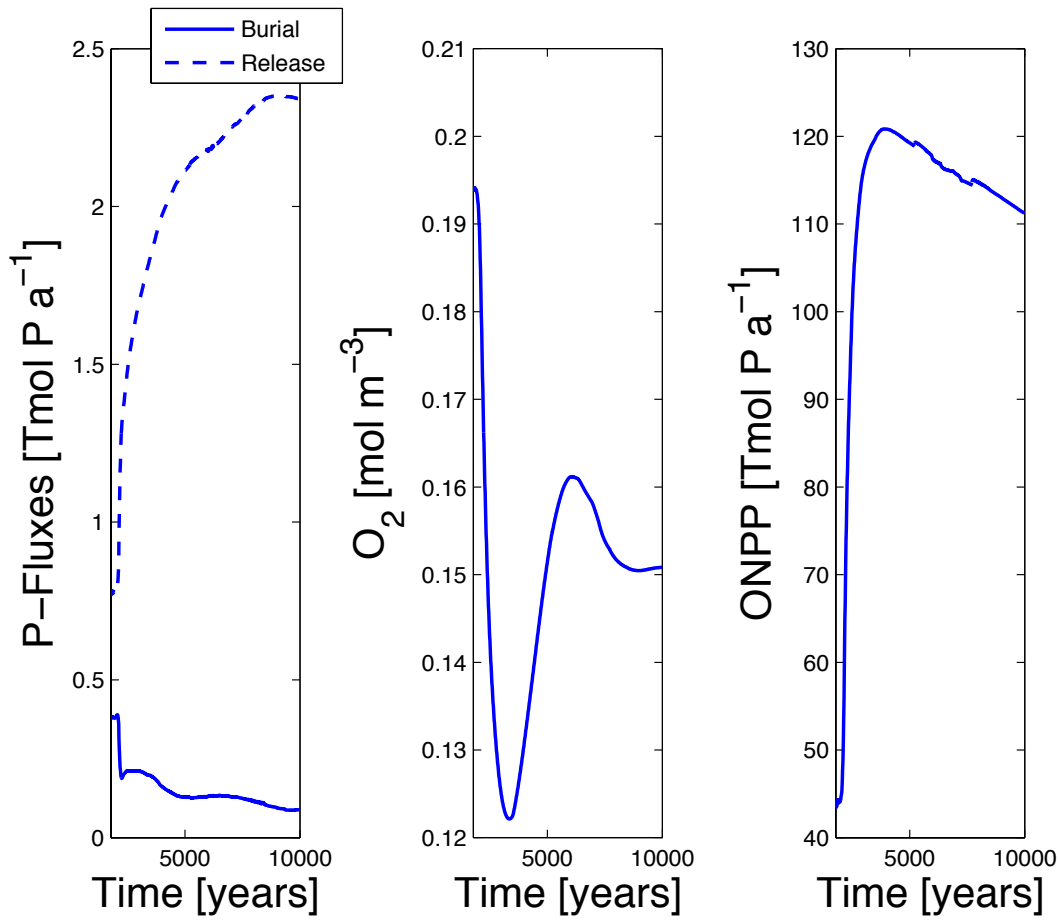


Figure S1: Global mean and annual mean time series of phosphorus burial (blue solid line; left), phosphorus release (blue dashed line; left), oxygen (blue solid line; middle) and ONPP (blue solid line; right) for simulation WB until year 10,000.

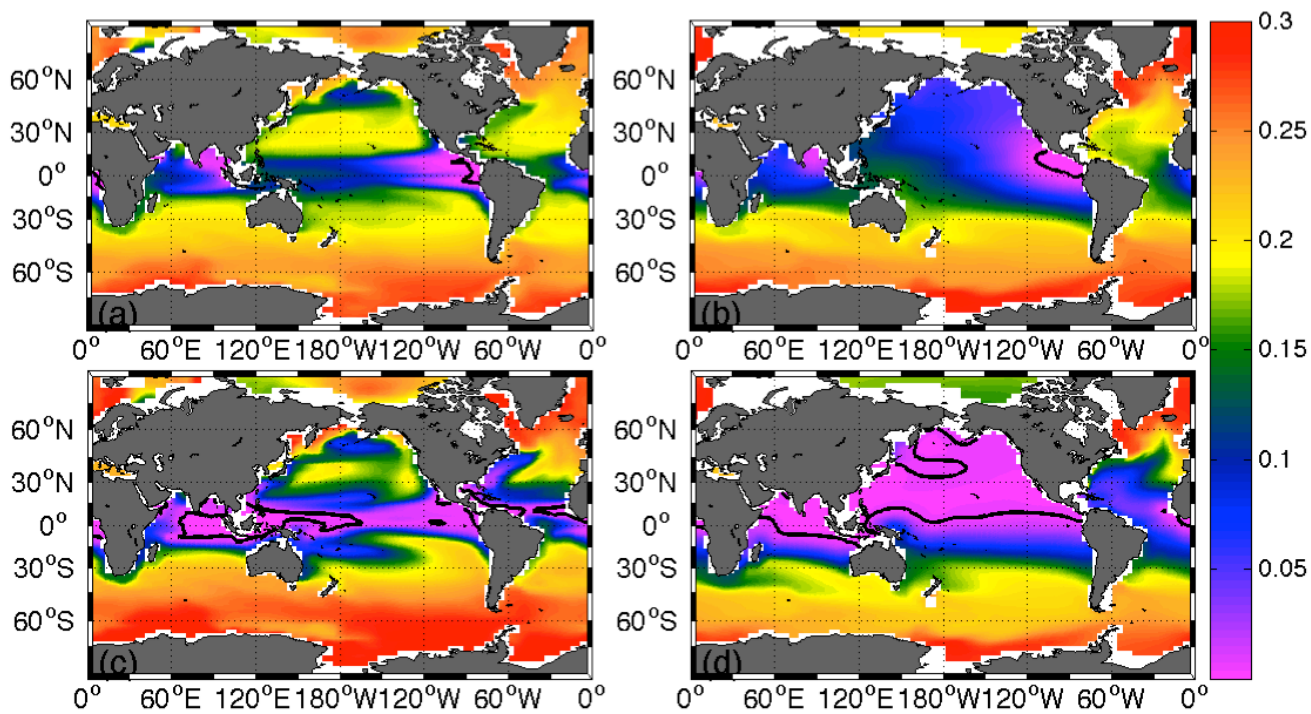


Figure S2: Oxygen concentration in  $\text{mol O}_2 \text{ m}^{-3}$  at year 10,000 simulated by the (a) control simulation at 300m depth, (b) and 900m depth, (c) simulation WB at 300m depth and (d) simulation WB at 900 m depth. The black contour lines at  $0.005 \text{ mol m}^{-3}$  highlight the oxygen minimum zones (OMZs).

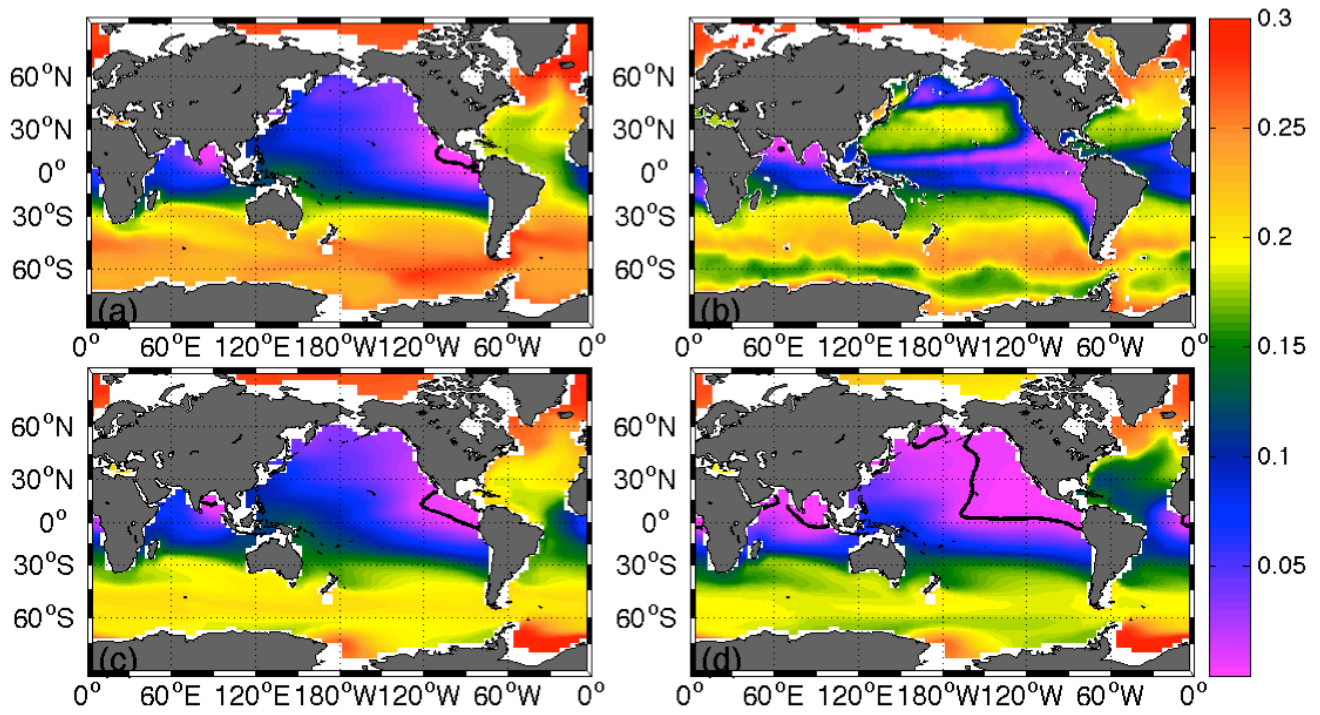


Figure S3: Oxygen concentration in mol O<sub>2</sub> m<sup>-3</sup> at 900m depth simulated by the (a) control simulation at year 1775 (representative for both REF and WB model runs in year 1775), (b) the World Ocean Atlas in 2009, (c) the control simulation at year 3005 and (d) simulation WB at year 3005. The black contour lines at 0.005 mol m<sup>-3</sup> highlight the oxygen minimum zones (OMZs).