



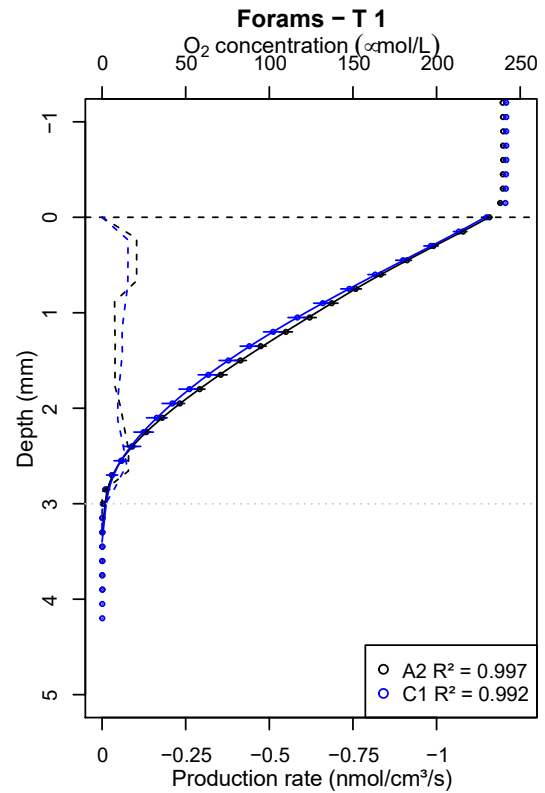
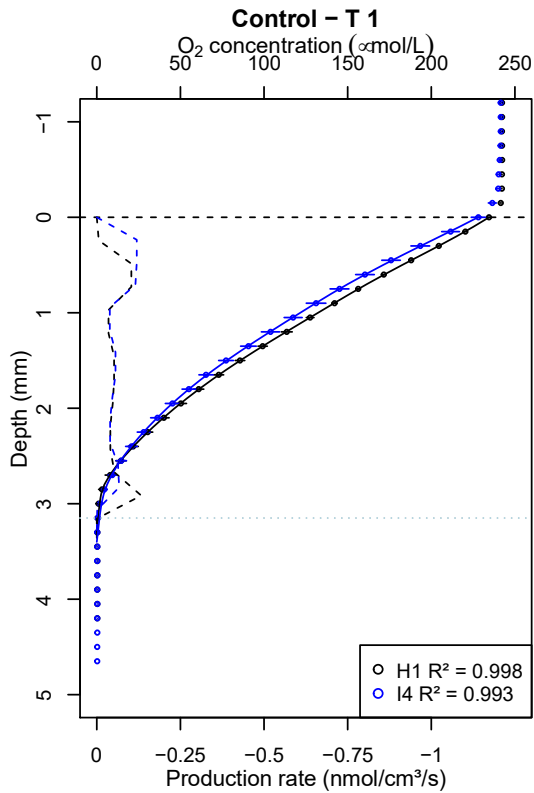
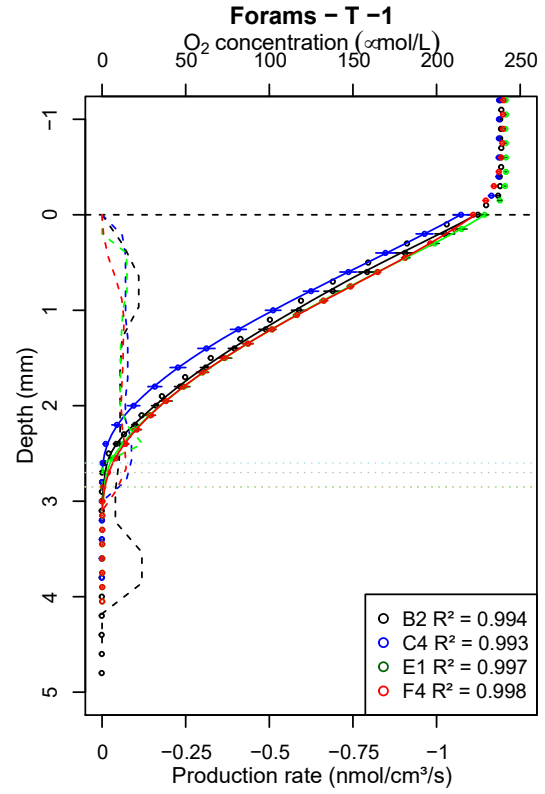
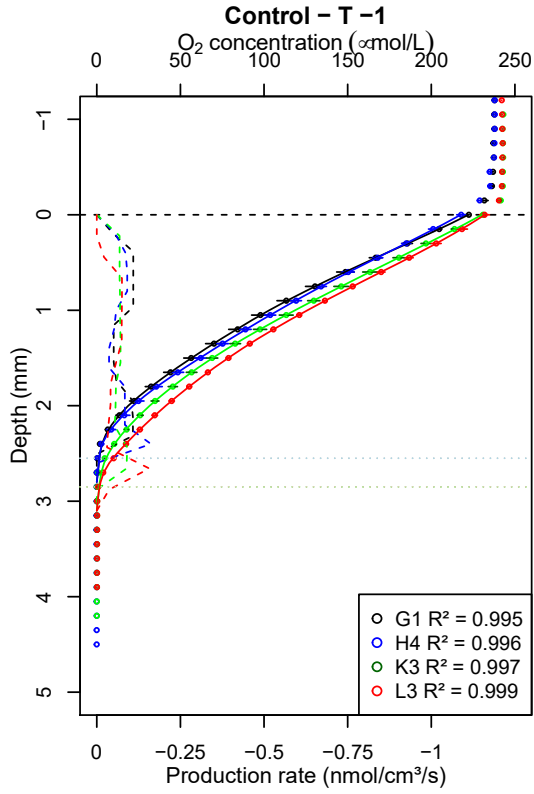
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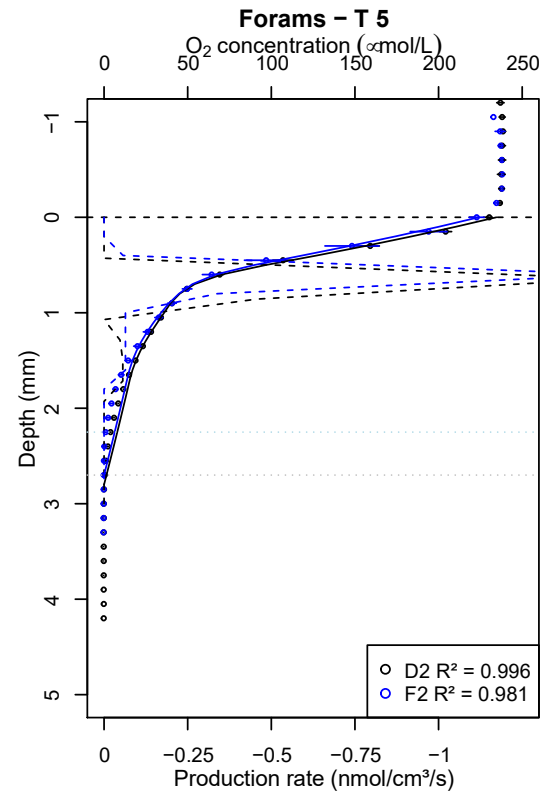
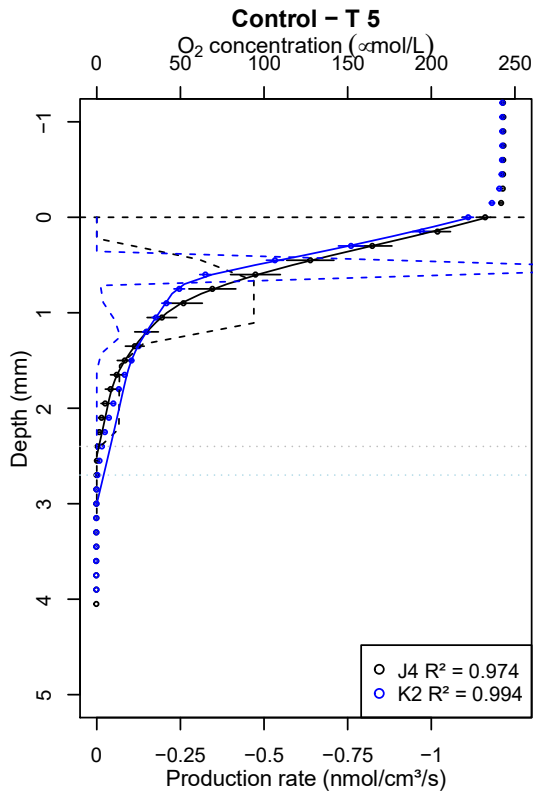
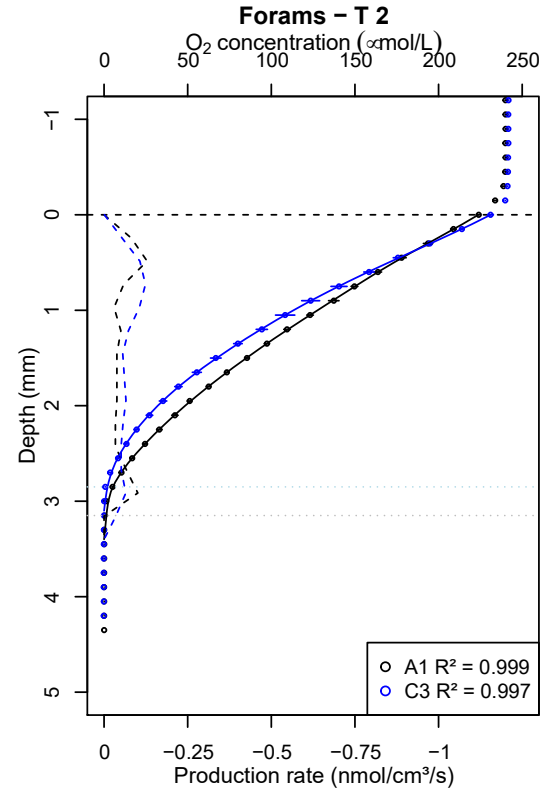
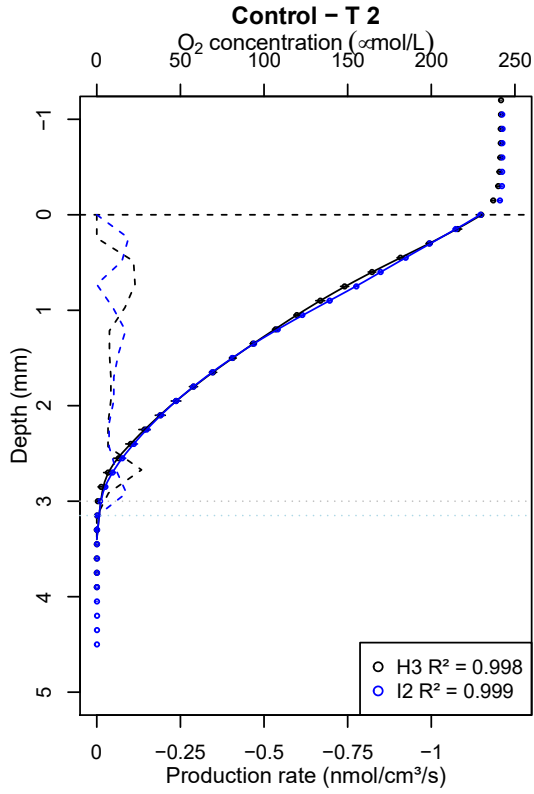
## **Single-celled bioturbators: benthic foraminifera mediate oxygen penetration and prokaryotic diversity in intertidal sediment**

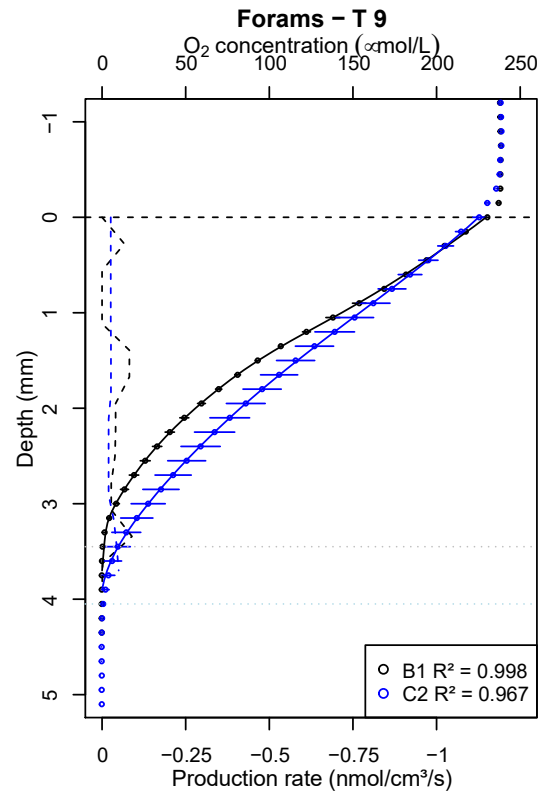
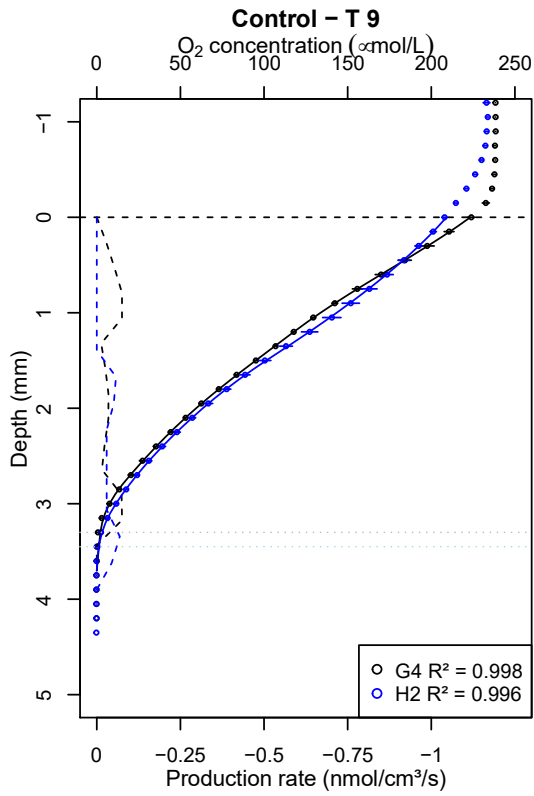
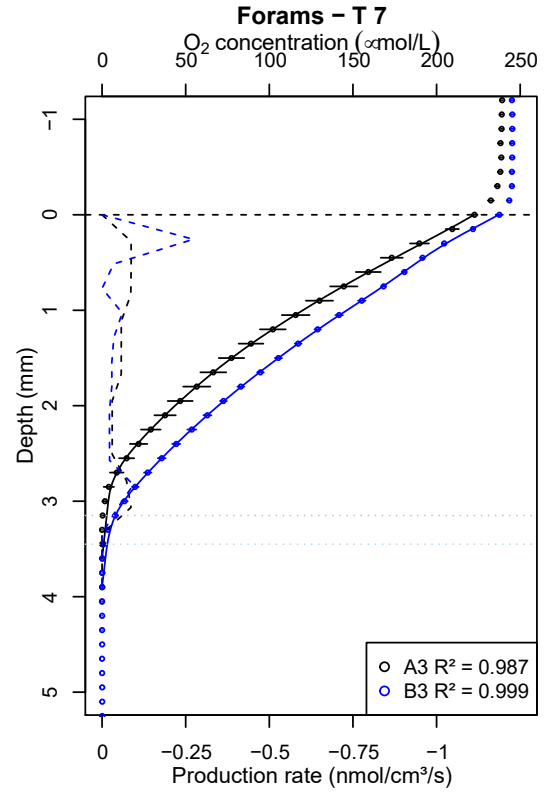
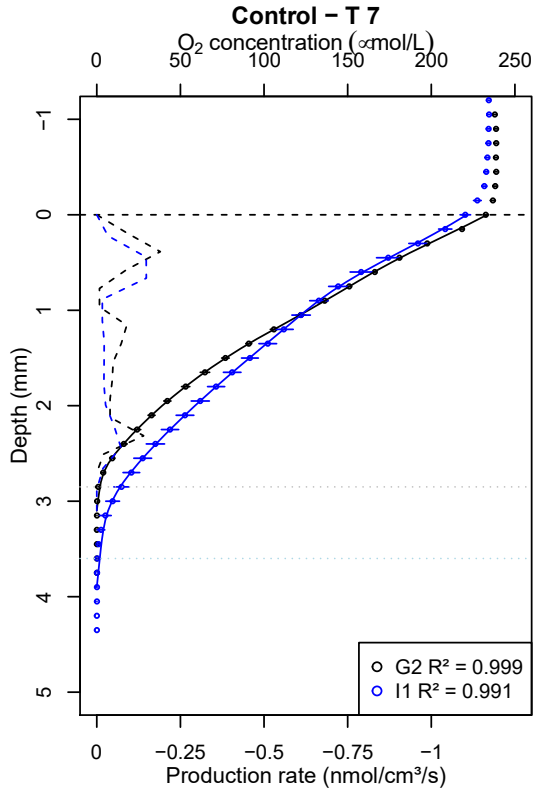
**Dewi Langlet et al.**

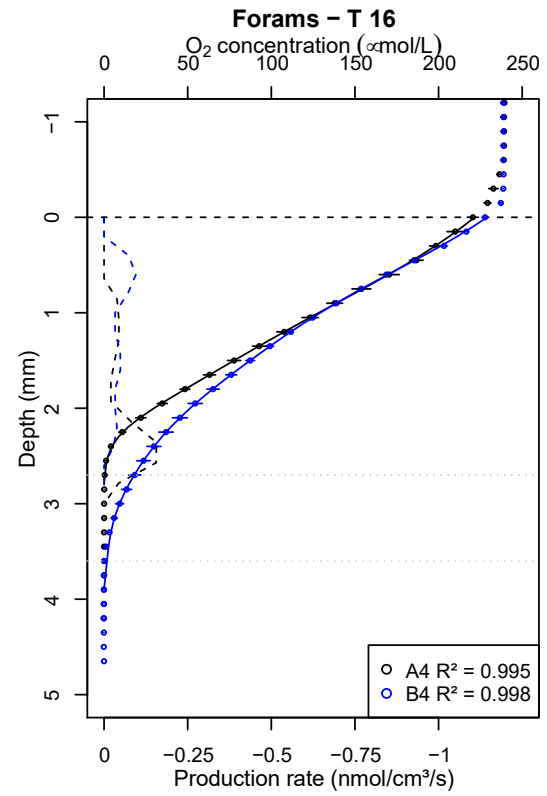
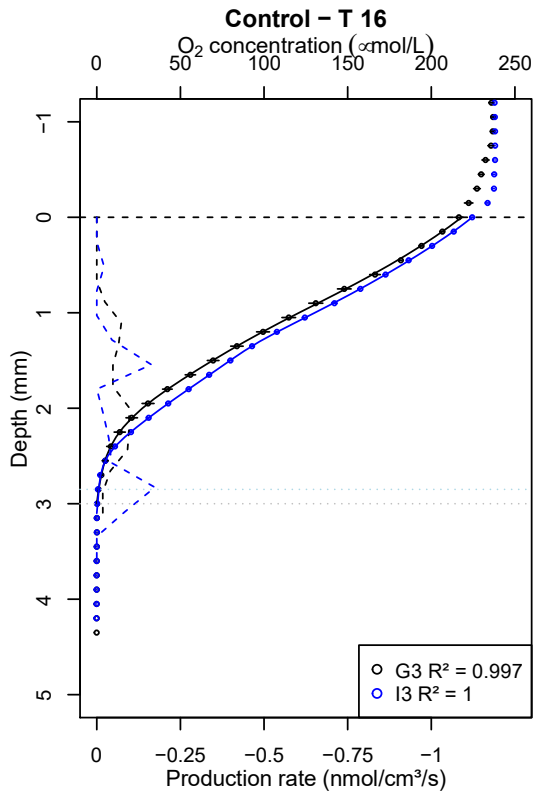
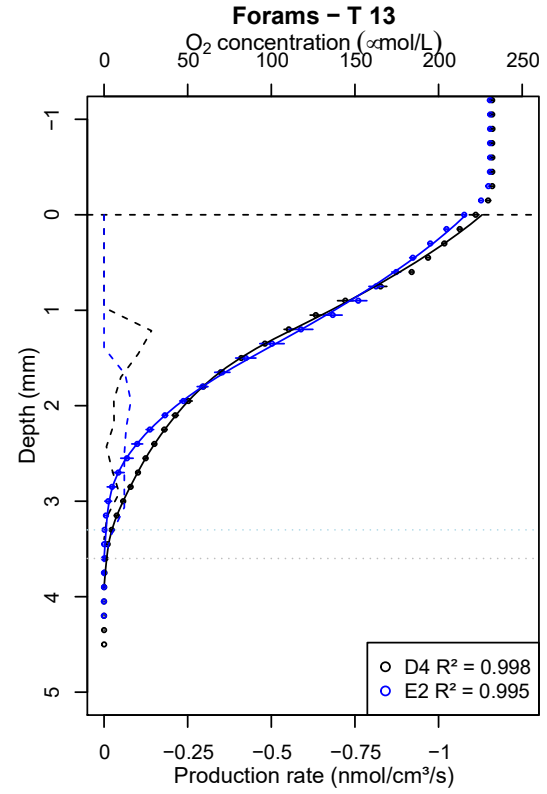
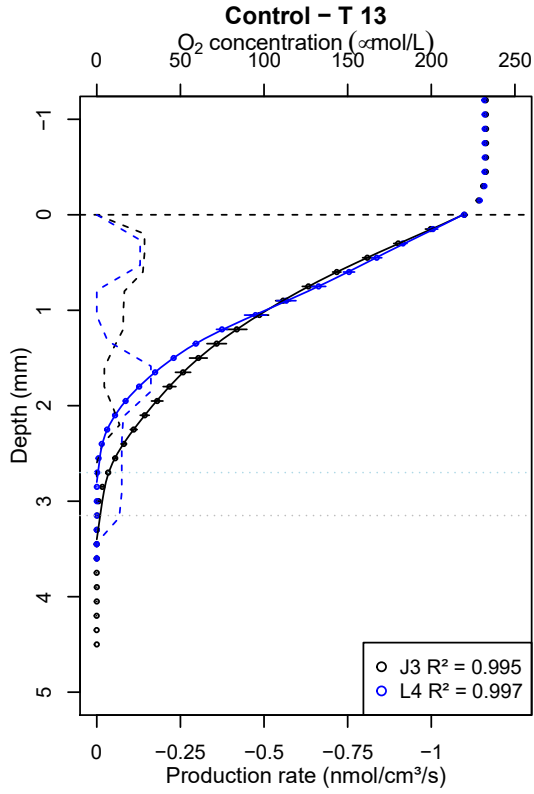
*Correspondence to:* Dewi Langlet ([dewi.langlet@ifremer.fr](mailto:dewi.langlet@ifremer.fr)) and Vincent M. P. Bouchet ([vincent.bouchet@univ-lille.fr](mailto:vincent.bouchet@univ-lille.fr))

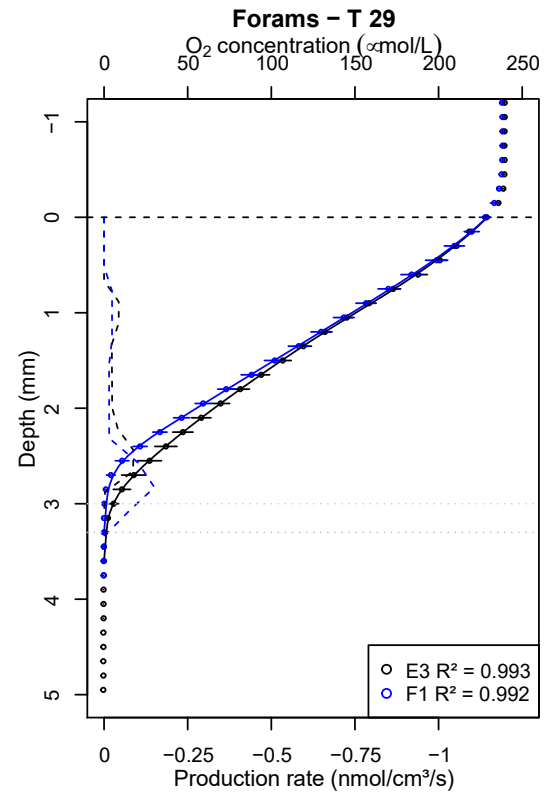
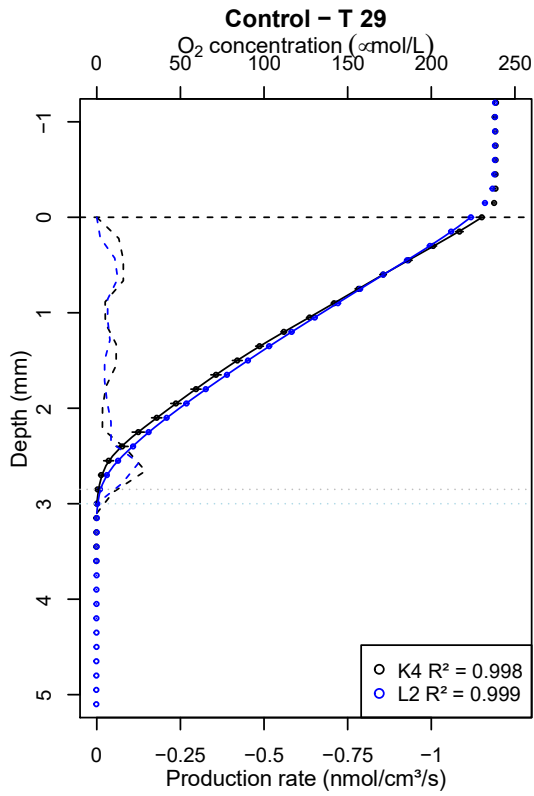
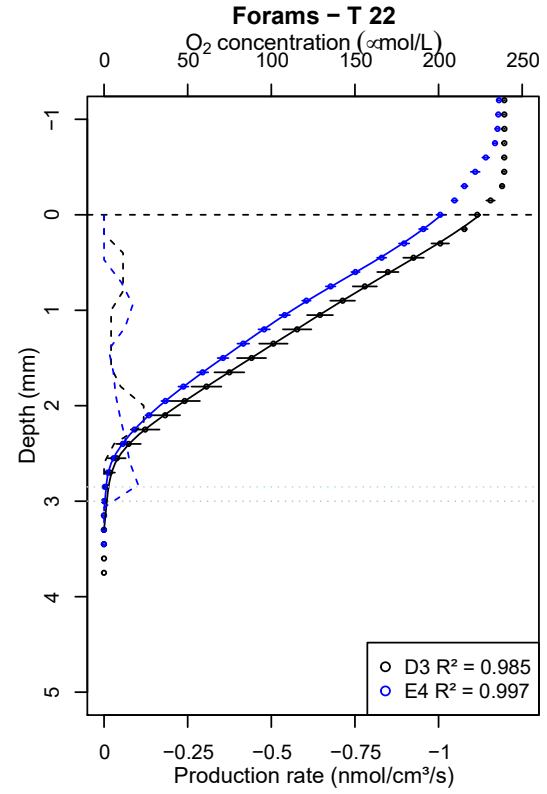
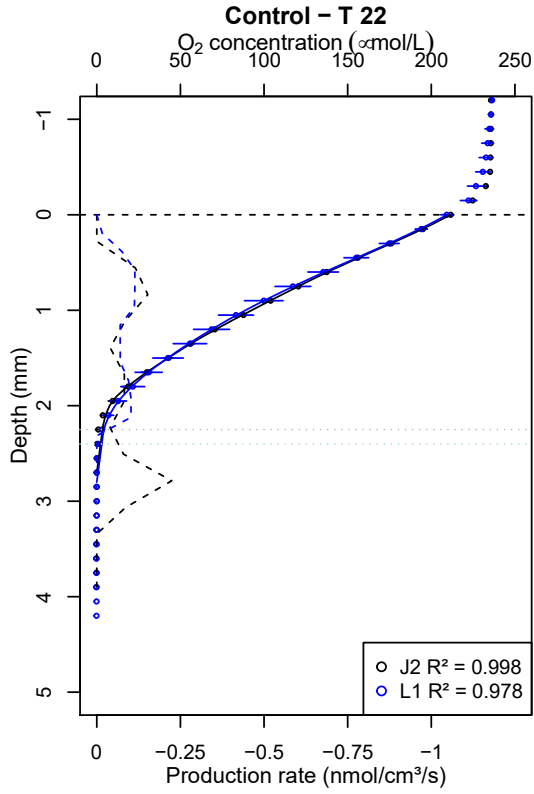
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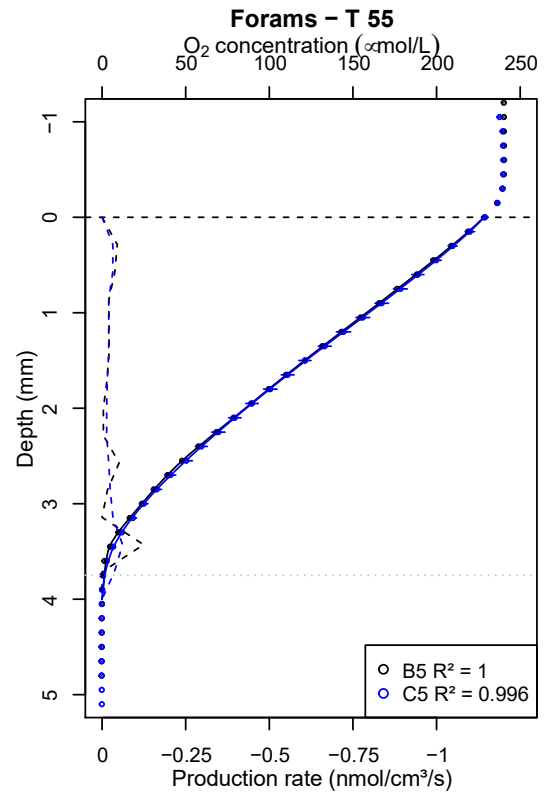
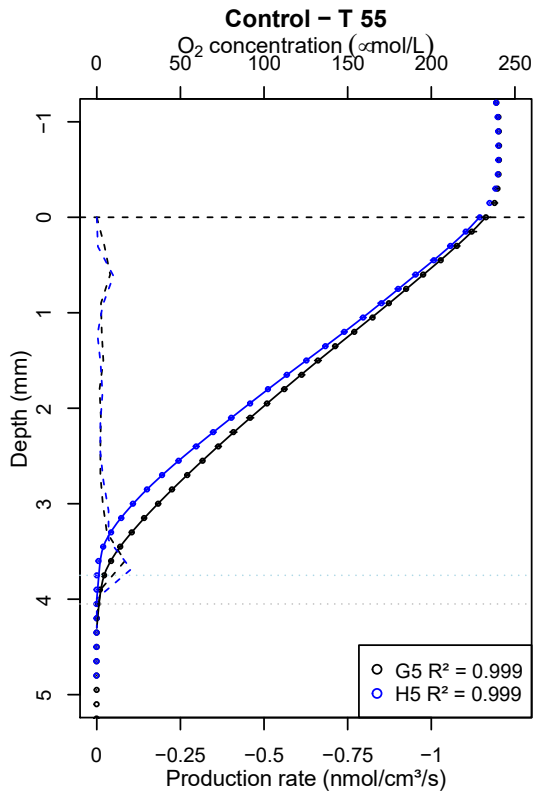
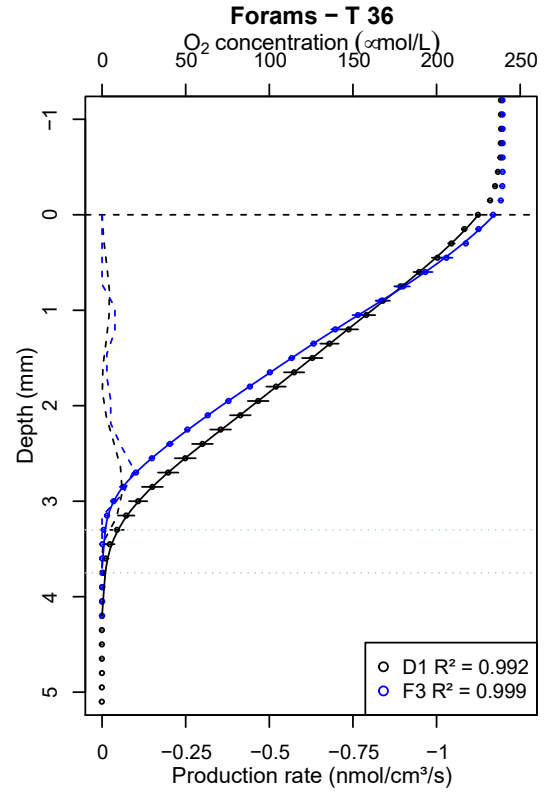
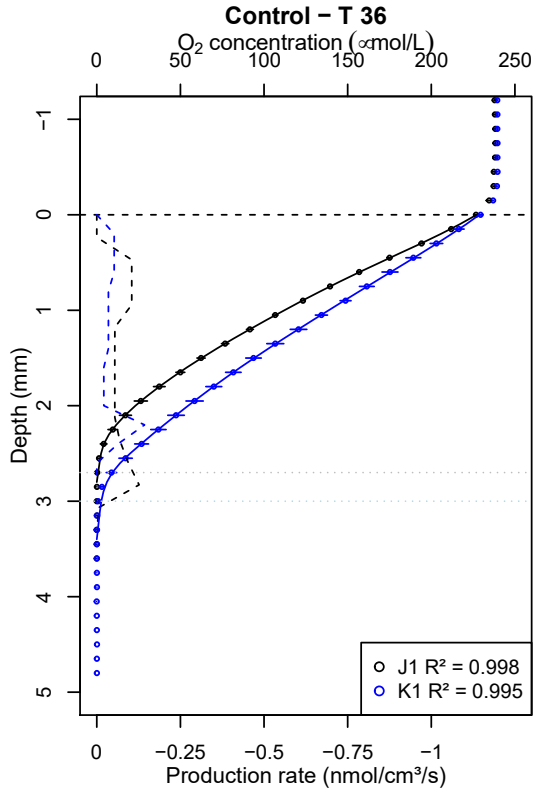


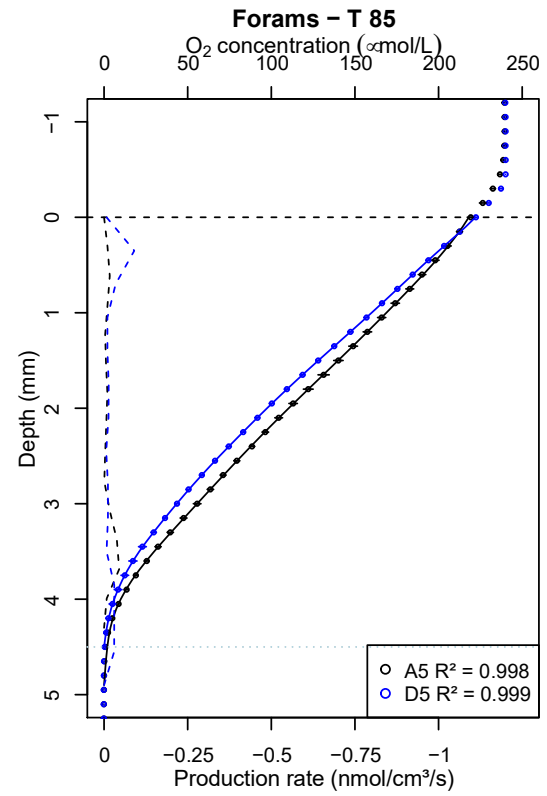
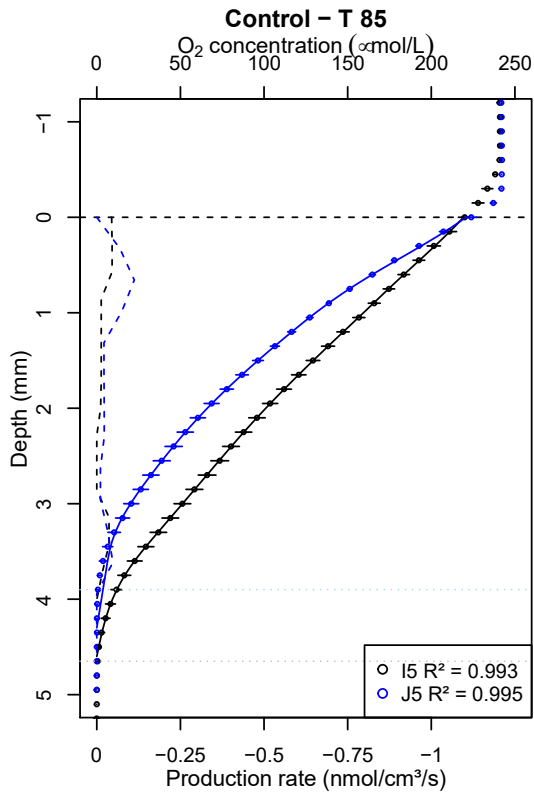
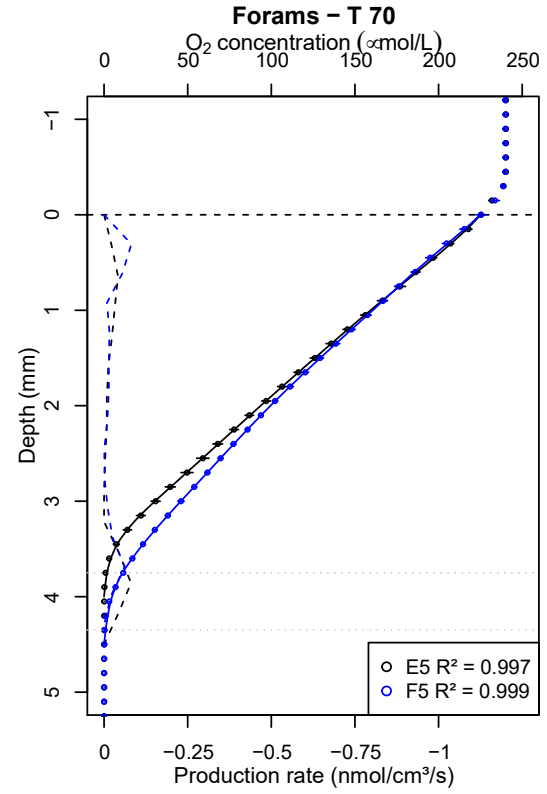
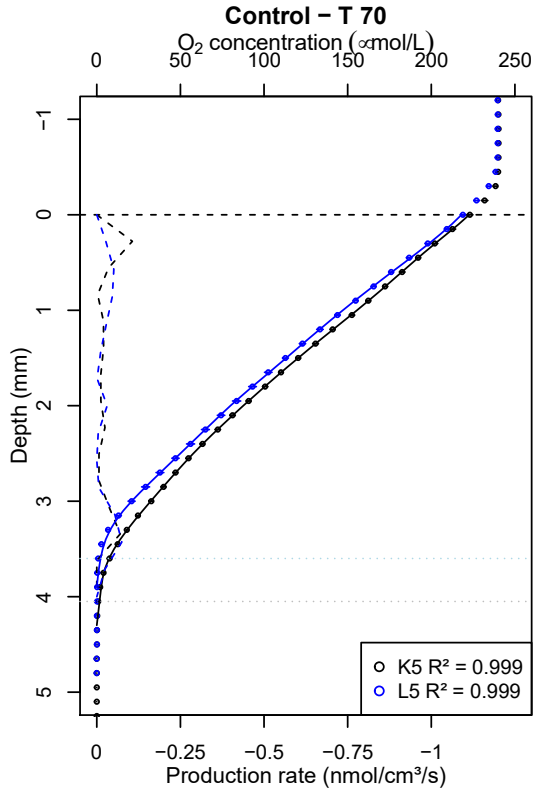






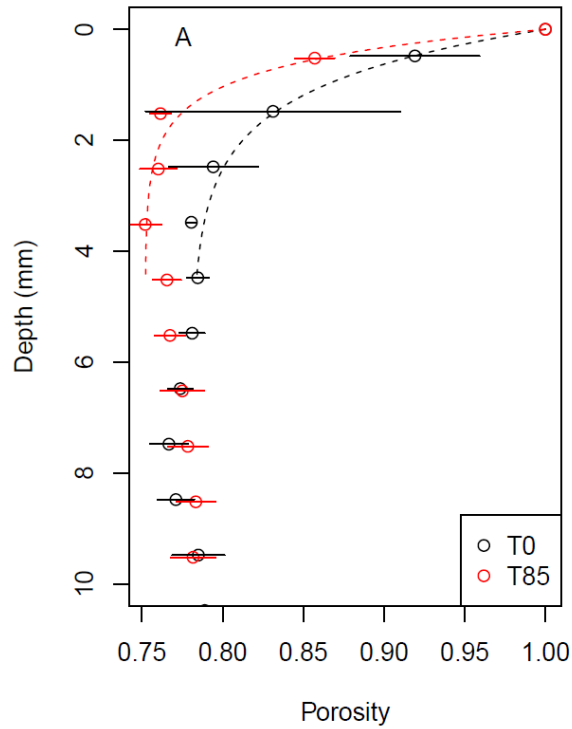








**Fig. S1. Oxygen profiles interpretation.** Average oxygen concentration distribution in the sediment +/- sem for all sampled zones in control (left panels) and in bioturbated cores (right panels) at all time. Full line shows the modeled vertical distribution of dissolved oxygen and dashed line represent the oxygen production rate at each depth interval. Profiles measured at T5 (J4, K2, D2 and F2) were not considered in the manuscript analysis due to the odd vertical distribution they exhibit.



**Fig. S2. Sediment microporosity vertical profiles.** Porosity profiles in the sediment at the beginning (black) and the end of the experiment (red). For all profiles, open circles represent the average and the whiskers the standard deviation calculated on 4 replicates. Dashed lines are the modeled distribution per depth in the top 5 mm, such as porosity =  $0.78 + 0.22 \exp(-0.97 \times \text{depth})$  at the beginning of the experiment and porosity =  $0.75 + 0.25 \exp(-1.59 \times \text{depth})$  after 85 days of experiment.

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**Table S1. Sampling plan.** Detailed sampling plan with zones randomly selected for microprofiling at each sampling time, for each zone the letter corresponds to the identification of a core and the digit to the sampling zone (see Figure 6B).

Time (days)	Bioturbated zones	Control zones
-1	B2 C4 F4 E1	G1 H4 K3 L3
1	A2 C1	I4 H1
2	A1 C3	H3 I2
5	D2 F2	J4 K2
7	A3 B3	G2 I1
9	C2 B1	H2 G4
13	D4 E2	L4 J3
16	A4 B4	I3 G3
22	D3 E4	J2 L1
29	E3 F1	K4 L2
36	F3 D1	J1 K1
55	C5 B5	G5 H5
70	F5 E5	L5 K5
85	A5 D5	J5 I5