

1 Supplementary material.

2 **Table S1.** Carbon fluxes measured during P, Q and R experiments in the three MESO-DUST
 3 (D1, D2 and D3) and in the three CONTROL-MESO (C1, C2 and C3) in mg C.m⁻². d⁻¹. For
 4 complete sampling schedule of the 3 parameters, see table 2 in Guieu et al.(2013b).

Sample		(hours)								
Label	DATE	time ⁽¹⁾	MESO-DUST mg C m-2 d-1			MESO-CONTROL mg C m-2 d-1				
				P_POC	P_PP	P_BR		P_POC	P_PP	P_BR
P1	10/06/08	-17	D1		54	450	C1		66	360
P1	10/06/08	-17	D2		60	450	C2		67	405
P1	10/06/08	-17	D3		55	435	C3		59	495
P3	12/06/08	24	D1	32	123		C1	5	54	
P3	12/06/08	24	D2	30	143		C2	1	73	
P3	12/06/08	24	D3	41	152		C3	3	72	
P4	13/06/08	48	D1		130	1170	C1		76	540
P4	13/06/08	48	D2		155	1320	C2		83	585
P4	13/06/08	48	D3		119	1065	C3		72	450
P4'	14/06/08	72	D1	44			C1	4		
P4'	14/06/08	72	D2	30			C2	4		
P4'	14/06/08	72	D3	22			C3	12		
P5	15/06/08	96	D1		111		C1		69	
P5	15/06/08	96	D2		141		C2		78	
P5	15/06/08	96	D3		108		C3		79	
P6	16/06/08	120	D1	9		1185	C1	2		495
P6	16/06/08	120	D2	26		1290	C2	7		435
P6	16/06/08	120	D3	12		1125	C3	2		450
P8	18/06/08	168	D1	9	120	1185	C1	4	79	
P8	18/06/08	168	D2	12	119	1290	C2	2	68	
P8	18/06/08	168	D3	8	103	1125	C3	3	69	

				Q_POC	Q_PP	Q_BR		Q_POC	Q_PP	Q_BR
Q1	20/06/08	-2	D1		45	171	C1		47	151
Q1	20/06/08	-2	D2		49	174	C2		53	246
Q1	20/06/08	-2	D3		49	230	C3		49	155
Q3	21/06/08	22	D1	11	72		C1	2	67	
Q3	21/06/08	22	D2	6	65		C2	3	51	
Q3	21/06/08	22	D3	9	69		C3	2	59	
Q4	22/06/08	46	D1		50	227	C1		54	103
Q4	22/06/08	46	D2		66	228	C2		59	115
Q4	22/06/08	46	D3		61	191	C3		60	149
Q5	23/06/08	70	D1	4	69		C1	1	73	
Q5	23/06/08	70	D2	4	53		C2	3	70	
Q5	23/06/08	70	D3	5	53		C3	2	80	
Q7	25/06/08	118	D1	5	63		C1	2	69	
Q7	25/06/08	118	D2	3	56		C2	3	63	
Q7	25/06/08	118	D3	6	60		C3	3	56	
Q9	27/06/08	166	D1	3	79	265	C1	1	89	64
Q9	27/06/08	166	D2	3	102	301	C2	4	74	68
Q9	27/06/08	166	D3	2	67	191	C3	5	67	94
				R_POC	R_PP	R_BR		R_POC	R_PP	R_BR
R1	26/06/10	-1	D1		54.6		C1			120
R1	26/06/10	-1	D2		43.9	180	C2		43.8	
R1	26/06/10	-1	D3		55.3		C3		42.9	
R3	27/06/10	24	D1	27.7	72.1		C1	10.3	35.0	
R3	27/06/10	24	D2	22.0	73.3		C2	8.8	33.3	
R3	27/06/10	24	D3	18.8	111.4		C3	10.2	32.8	
R4	28/06/10	48	D1	31.9	115.4	270	C1	18.7	53.1	45
R4	28/06/10	48	D2	31.0	80.1	345	C2	9.4	38.4	75
R4	28/06/10	48	D3	20.6	133.8	210	C3	9.6	59.0	75

R5	29/06/10	72	D1	16.9	92.5		C1	8.7	56.7	
R5	29/06/10	72	D2	19.5	88.1		C2	5.8	60.9	
R5	29/06/10	72	D3	19.0	131.8		C3	9.3	41.0	
R6	30/06/10	96	D1	30.0	110.9	405	C1	12.6	33.8	135
R6	30/06/10	96	D2	25.8	83.4	780	C2	6.6	51.0	120
R6	30/06/10	96	D3	15.0	130.2	345	C3	5.6	48.0	90
R7	01/07/10	120	D1	7.0	100.3		C1	5.2	49.1	
R7	01/07/10	120	D2	6.6	86.6		C2	3.4	44.9	
R7	01/07/10	120	D3	9.3	115.7		C3	3.9	50.5	
R8	02/07/10	144	D1	5.4	88.0	540	C1	1.7	36.1	255
R8	02/07/10	144	D2	8.5	47.9	735	C2	0.9	27.2	180
R8	02/07/10	144	D3	3.9	107.5		C3	2.5	35.8	285
R9 ⁽²⁾	03/07/10	168	D1	4.9			C1	3.5		
R9	03/07/10	168	D2	4.3			C2	3.3		
R9	03/07/10	168	D3	4.9			C3	2.2		
R11	04/07/10	192	D1	21.4	155.5	465	C1	4.24	49.1	225
R11	04/07/10	192	D2	41.6	118.9	705	C2	3.33	53.8	255
R11	04/07/10	192	D3	18.9	165.0	495	C3	3.43	53.7	180
R12	05/07/10	216	D1	8.6	152.8		C1			
R12	05/07/10	216	D2	17.2	124.3		C2	2.66	65.8	
R12	05/07/10	216	D3	11.7	152.0		C3	2.11	57.6	
R13	06/07/10	247	D1	11.9	171.5	465	C1	1.53	37.1	195
R13	06/07/10	247	D2	12.1	148.4	510	C2	2.12	58.5	120
R13	06/07/10	247	D3	10.9	161.4	750	C3		52.8	465
R14	07/07/10	264	D1	3.4	123.6		C1		54.3	
R14	07/07/10	264	D2	8.1	124.9		C2		53.0	
R14	07/07/10	264	D3	7.1	132.1		C3	0.70	57.4	
R15	08/07/10	288	D1	6.6	111.1		C1		52.2	
R15	08/07/10	288	D2	0.2	110.7		C2		59.2	

R15	08/07/10	288	D3	3.8	127.1		C3	0.46	54.5	
R16	09/07/10	312	D1	4.9	91.6		C1		49.3	
R16	09/07/10	312	D2	1.1	101.7		C2		55.0	
R16	09/07/10	312	D3	1.9	124.4		C3	0.84	65.7	
(1) this is the time in hours since dust seeding							-			
(2) second seeding for R took place on R9										
*for POC_CONTROL, at times R14, R15 and R16, the traps were grouped										

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6 **Table S2.** Calculation of the particulate organic carbon associated to the lithogenic particles
7 (POC_{dust}) still in suspension in the mesocosm at the end of the experiment and assuming a
8 constant carrying coefficient (i.e. independent of the dust characteristics).

Experiment	Remaining dust in the mesocosm at the end of the experiment		Ratio litho/POC in sediment traps	Lithogenic POC_{dust} remaining in the mesocosm at the end of the experiment
	in %	in g of dust		in g of COP
<i>Desboeufs et al. (2013)</i>				
P	52%	22.4	13.5	1.7
Q	89%	36.9	23.3	1.6
R (1st seeding)	43%	17.8	33.1	0.5
R (2nd seeding)	59%	24.5	32.9	0.7

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