

Flocculation of microplastic and cohesive sediment in natural seawater

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Experimental setup

Suspensions of natural sediment (100 mg l^{-1})
and PVC MP (1 mg l^{-1})

Particle size:

Natural sediment : $< 20 \text{ } \mu\text{m}$

MP: $63 - 125 \text{ } \mu\text{m}$

Incubation for two hours in rolling settling tubes

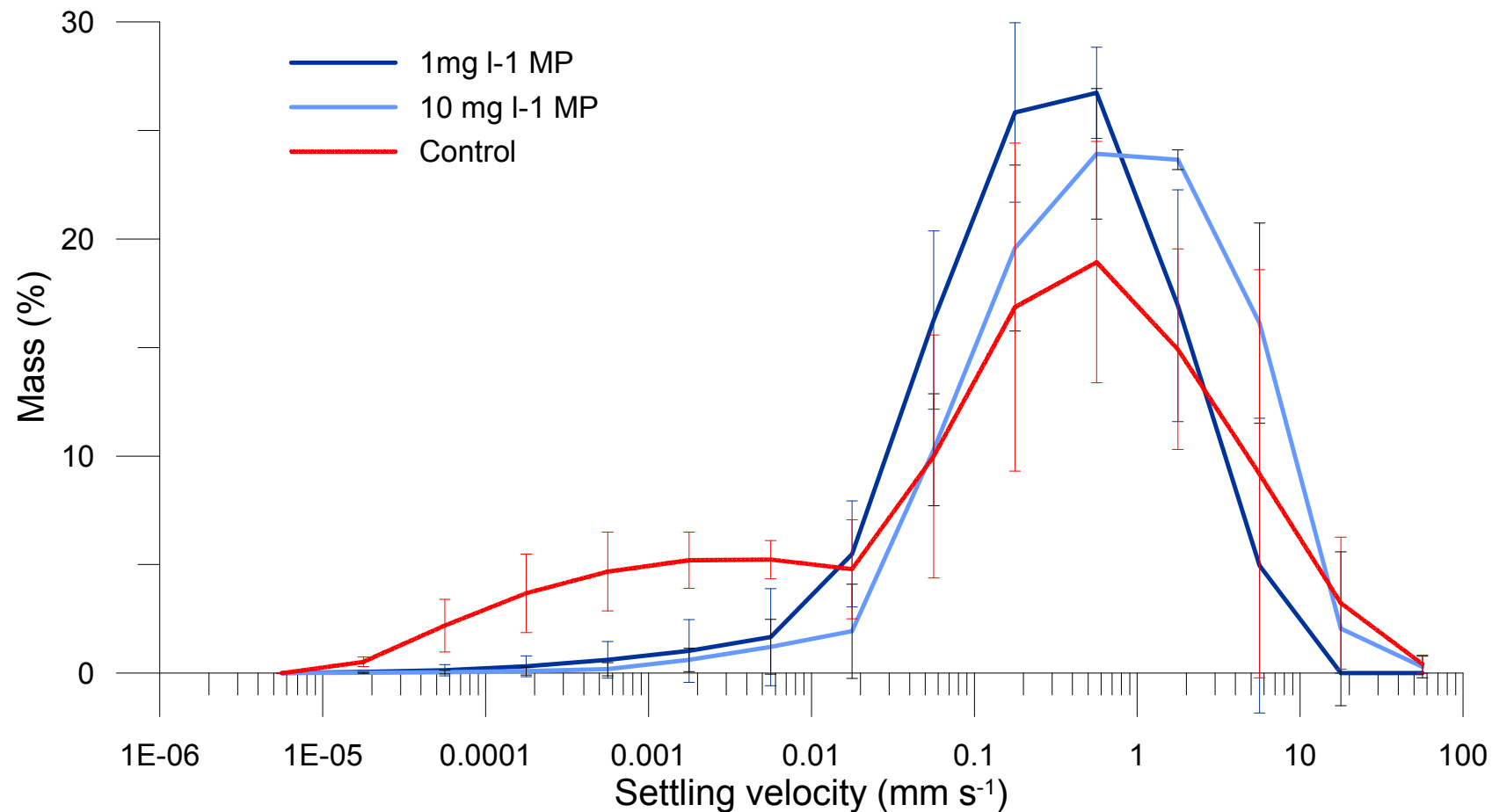
Settling tube experiments for 64 minutes



Flocculated suspension of 100 mg l⁻¹ sediment and 1 mg l⁻¹ PVC MP

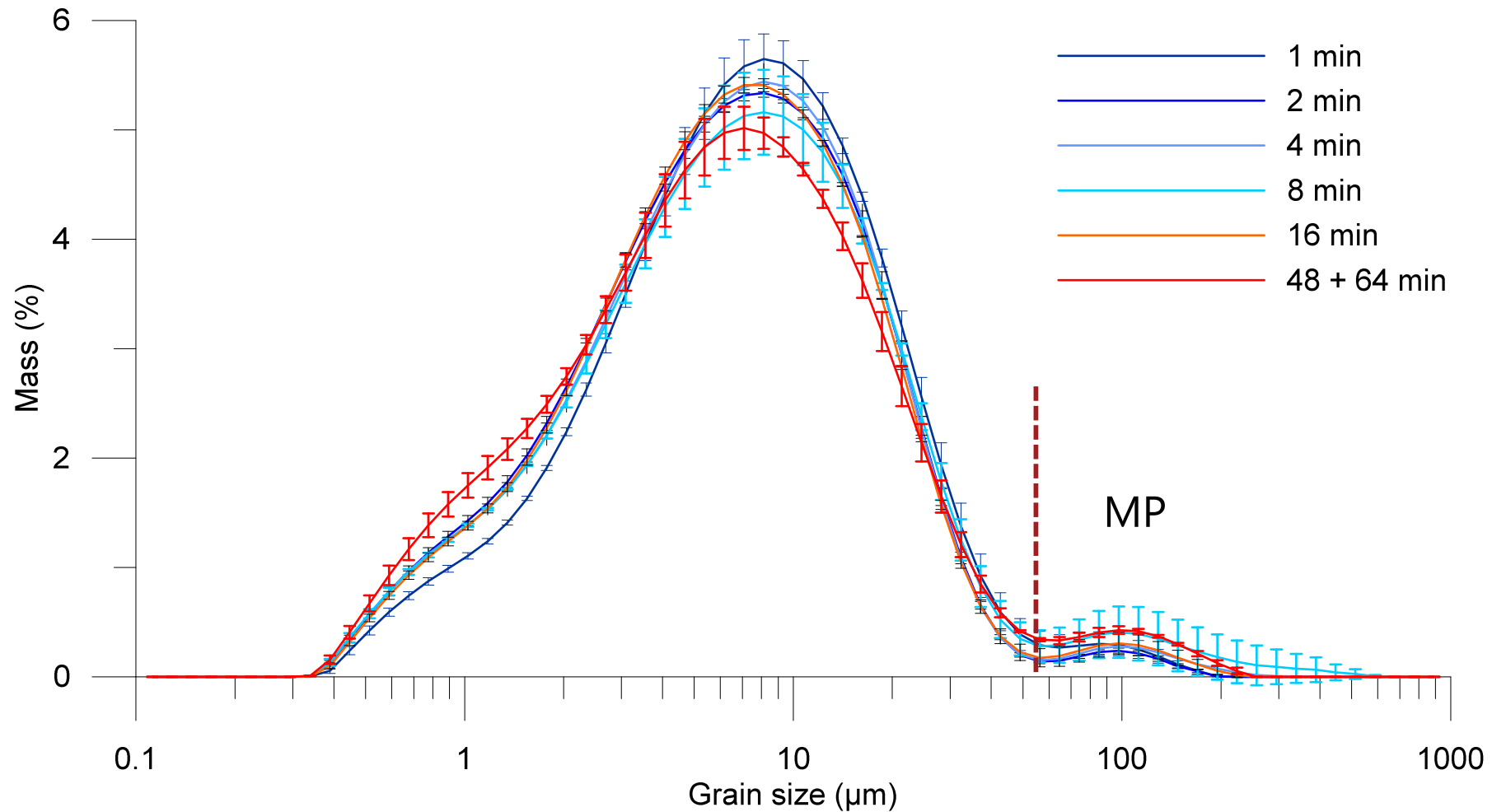


Settling velocity of suspensions of PVC microplastic and natural fine-grained sediment (100 mg l^{-1})

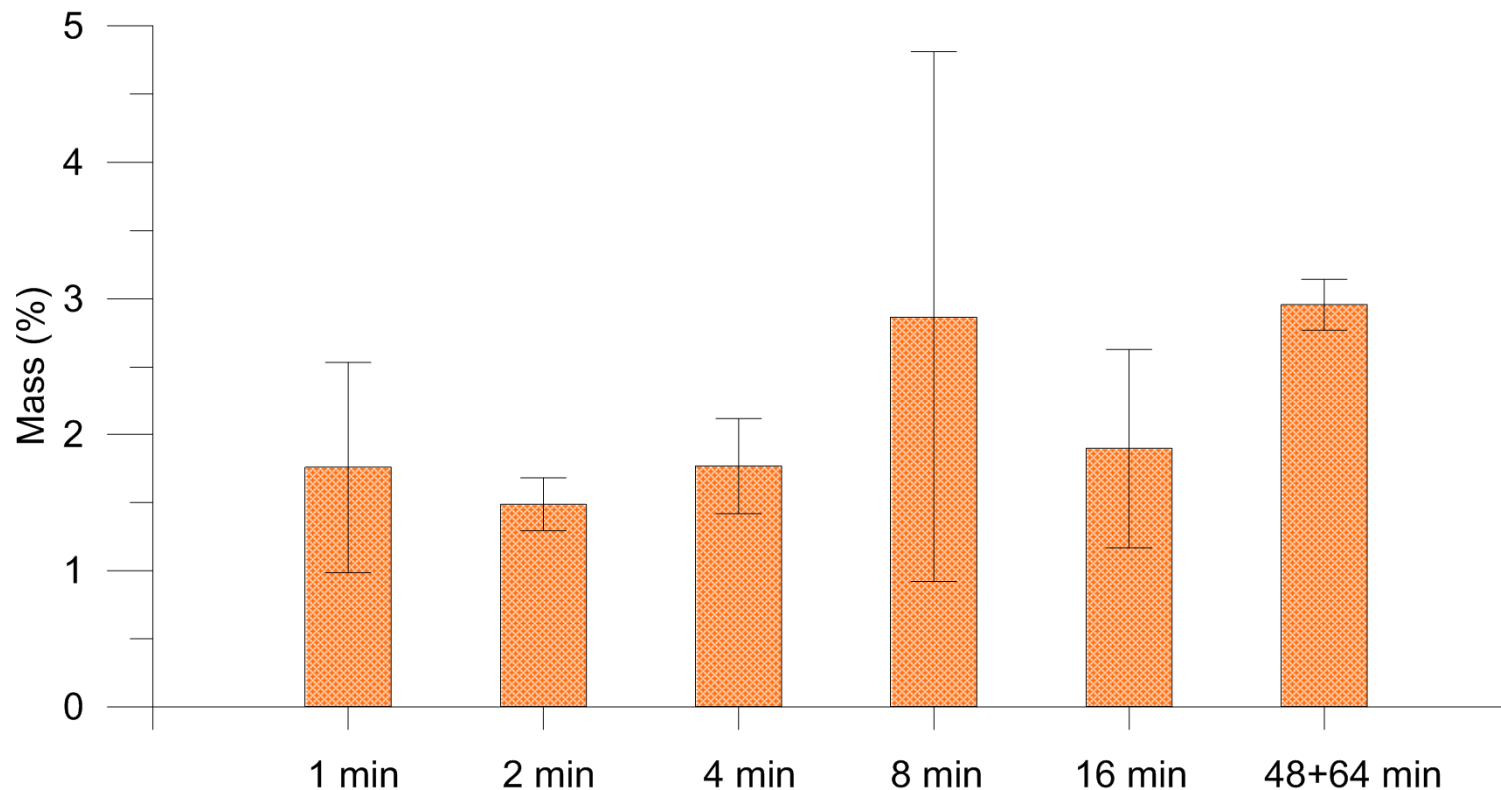


Fairly similar settling velocity distributions

Grain size distributions of individual subsamples from settling tubes, 100 mg l⁻¹ sediment + 1 mg l⁻¹ PVC MP



Content of MP in subsamples taken at various times during the settling experiment



Conclusion: All samples contain microplastic at approximately the same concentration. This is the result of total flocculation between the natural sediment and PVC microplastic.