

Table S1. Equations to calculate prokaryotic growth (PG), prokaryotic mortality, PG corrected for prokaryotic mortality, virus production (VP), viral decay (VD), VP corrected for VD, and FIC.

Equation no.	Equation	Unit
1	$PG = [(P_{\max1} - P_{\min1}) + (P_{\max2} - P_{\min2}) + (P_{\max3} - P_{\min3})] / (TP_{\max3} - TP_{\min1})$	cells mL ⁻¹ h ⁻¹
2 *	prokaryotic mortality = $[(P_{\min2} - P_{\max1}) + (P_{\min3} - P_{\max2})] / (TP_{\min3} - TP_{\max1})$	cells mL ⁻¹ h ⁻¹
3	PG corrected for prokaryotic mortality = PG + prokaryotic mortality	cells mL ⁻¹ h ⁻¹
4	prokaryotic turnover time = $(P_{\text{in situ}} / PG) / 24 \text{ h}$	d
5	$VP = [(V_{\max1} - V_{\min1}) + (V_{\max2} - V_{\min2}) + (V_{\max3} - V_{\min3})] / (TV_{\max3} - TV_{\min1})$	viruses mL ⁻¹ h ⁻¹
6 *	$VD = [(V_{\min1} - V_{\max0}) + (V_{\min2} - V_{\max1}) + (V_{\min3} - V_{\max2}) + (V_{\min4} - V_{\max3})] / (TV_{\min4} - TV_{\max0})$	viruses mL ⁻¹ h ⁻¹
7	VP corrected for VD = VP + VD	viruses mL ⁻¹ h ⁻¹
8	viral turnover time = $(V_{\text{in situ}} / VP) / 24\text{h}$	d
9	$FIC = 100 \times [(V_{\max1} - V_{\min1}) + (V_{\max2} - V_{\min2}) + (V_{\max3} - V_{\min3})] / (\text{burst size} \times P_0)$	% of in situ abundance

Parameters were calculated from temporal changes in prokaryotic and viral abundance during the incubations where $P_{\max n}$ and $P_{\min n}$ correspond to the nth local maximum and minimum, respectively, in prokaryotic abundance, $V_{\max n}$ and $V_{\min n}$ to the nth local maximum and minimum, respectively, in viral abundance, $TP_{\max n}$ and $TP_{\min n}$ to the time point of the nth local maximum and minimum, respectively, in prokaryotic abundance, and $TV_{\max n}$ and $TV_{\min n}$ to the time point of the nth local maximum and minimum, respectively, in viral abundance. Equations correspond to Fig. S1 and were adapted to other patterns of prokaryotic and viral abundance if necessary. PG, prokaryotic mortality, PG corrected for prokaryotic mortality, VP, VD, and VP corrected for VD were corrected for the difference between in situ and initial prokaryotic abundance when estimated from the virus dilution incubation.

* Please note that calculation of these rates results in negative values.