Supplemental Material

for

Liquid Polymer Enhances Methanogenesis and Restructures Prokaryotic Communities in Freshwater Sediments

Feckler, A.[1*], Bollinger, E.[1], Unik, A.[1], Mueller, P. [1], Filker, S.[2], Plicht, C.[1], Steinmetz, Z[1], Bundschuh, M.[1]

[1]*RPTU University Kaiserslautern-Landau, Department of Natural and Environmental Sciences, iES Landau, Institute for Environmental Sciences, Landau, Germany*

[2]*RPTU University Kaiserslautern-Landau, Department of Ecology, Kaiserslautern, Germany*

*Correspondence to
Alexander Feckler
RPTU University Kaiserslautern-Landau
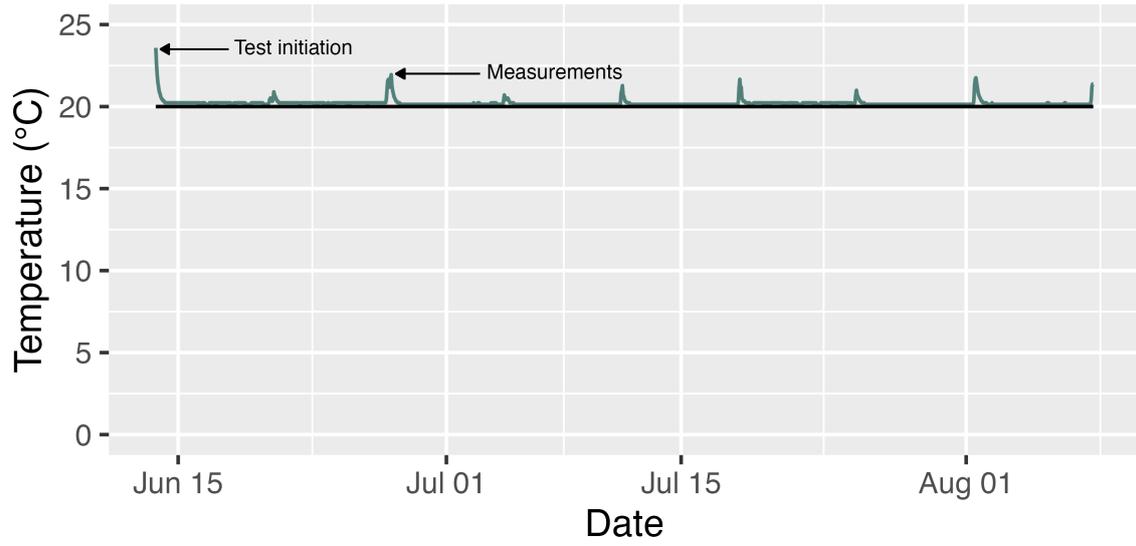Department of Natural and Environmental Sciences
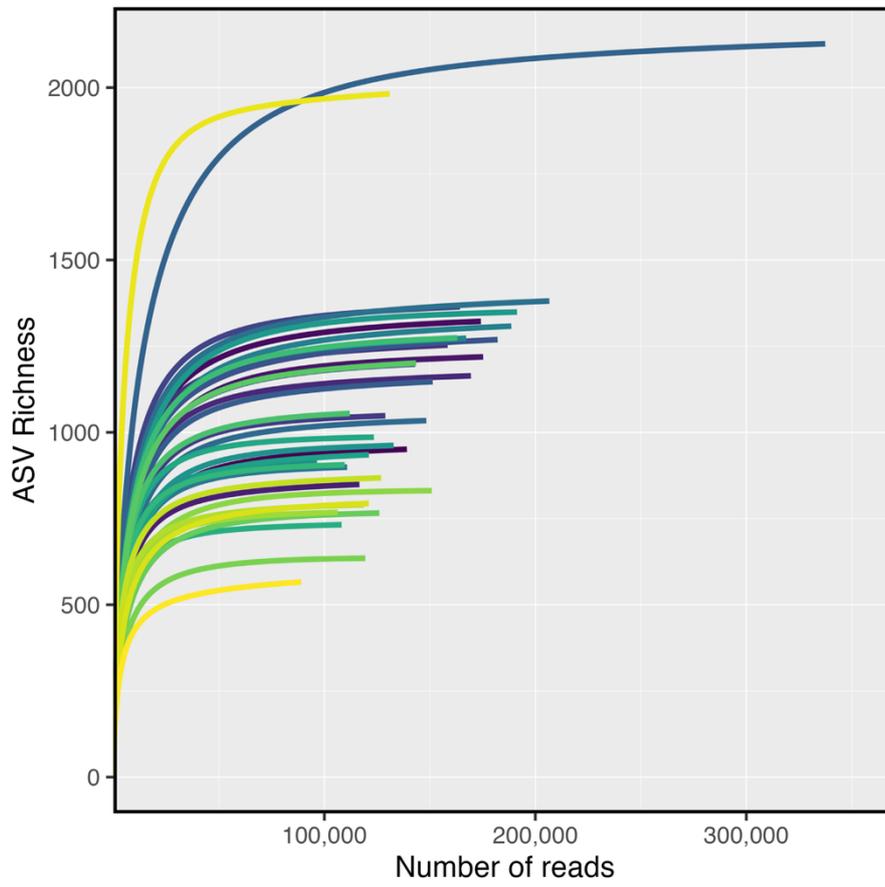iES Landau, Institute for Environmental Sciences
Fortstraße 7
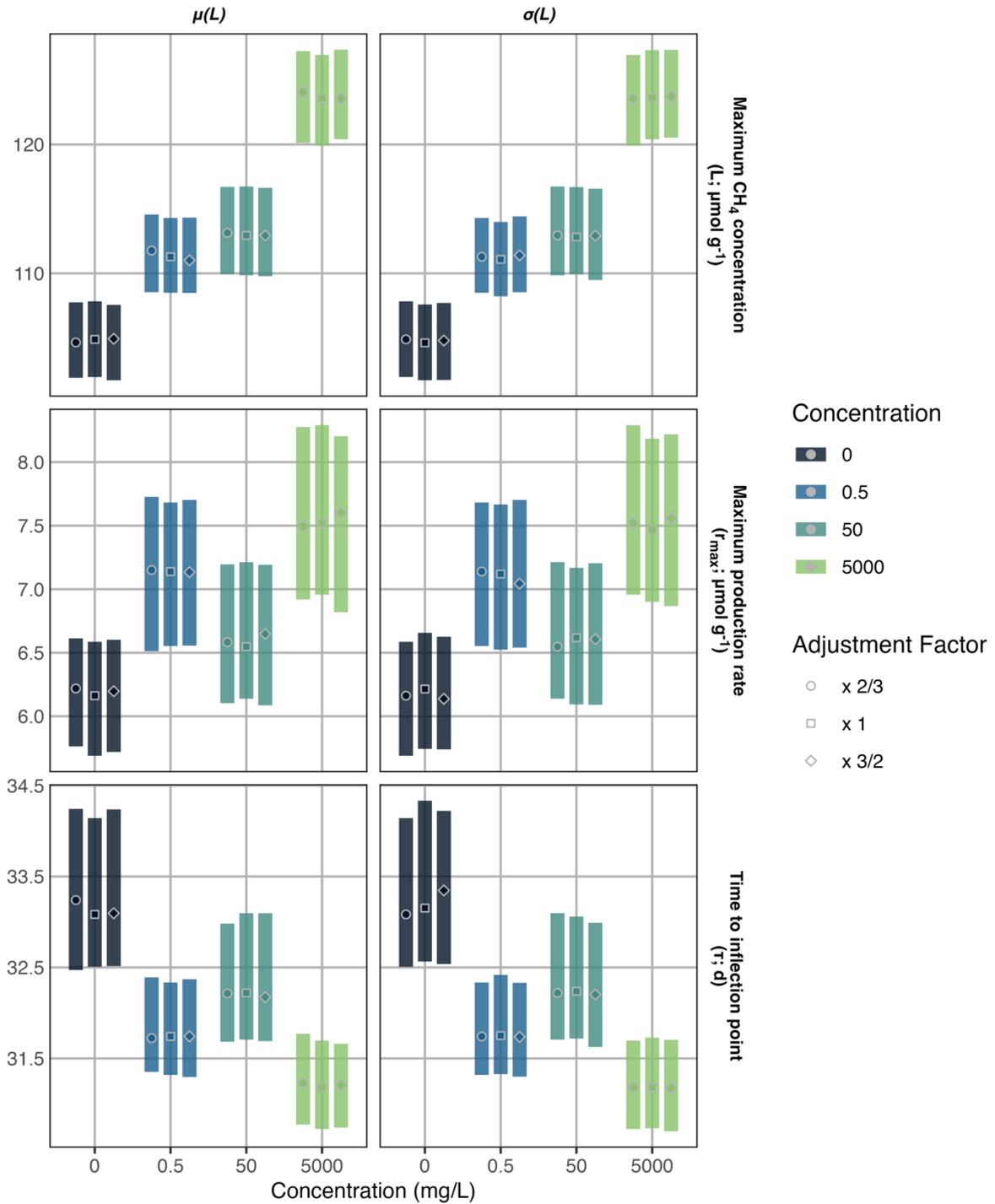76829 Landau/Palatinate
Germany
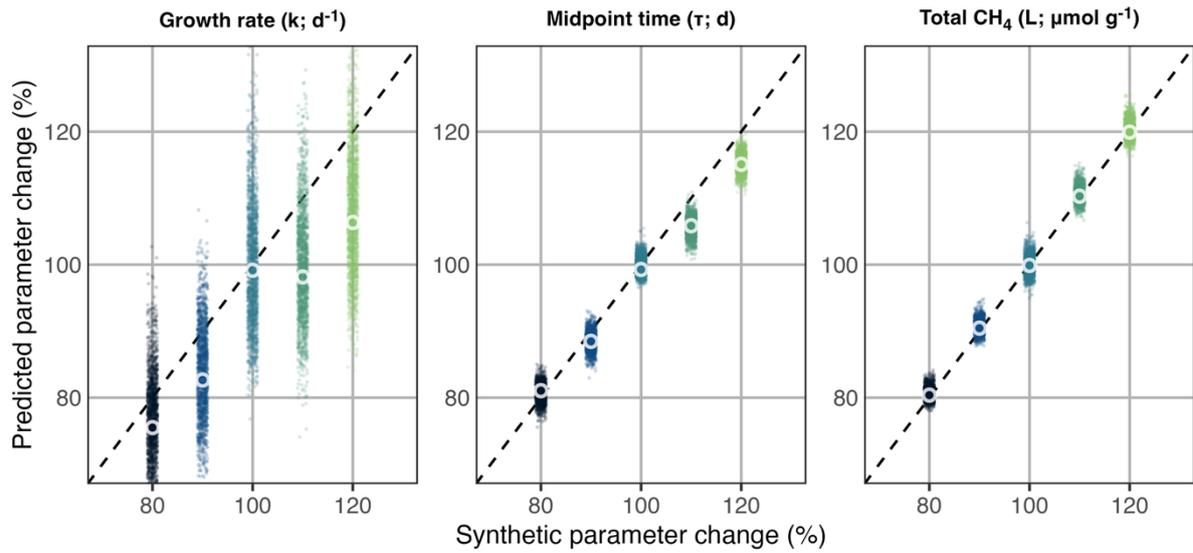Email: alexander.feckler@rptu.de

Figure S1. Temperature profile over the incubation period. Arrows indicate increased temperatures at test initiation and the weekly gas measurements.
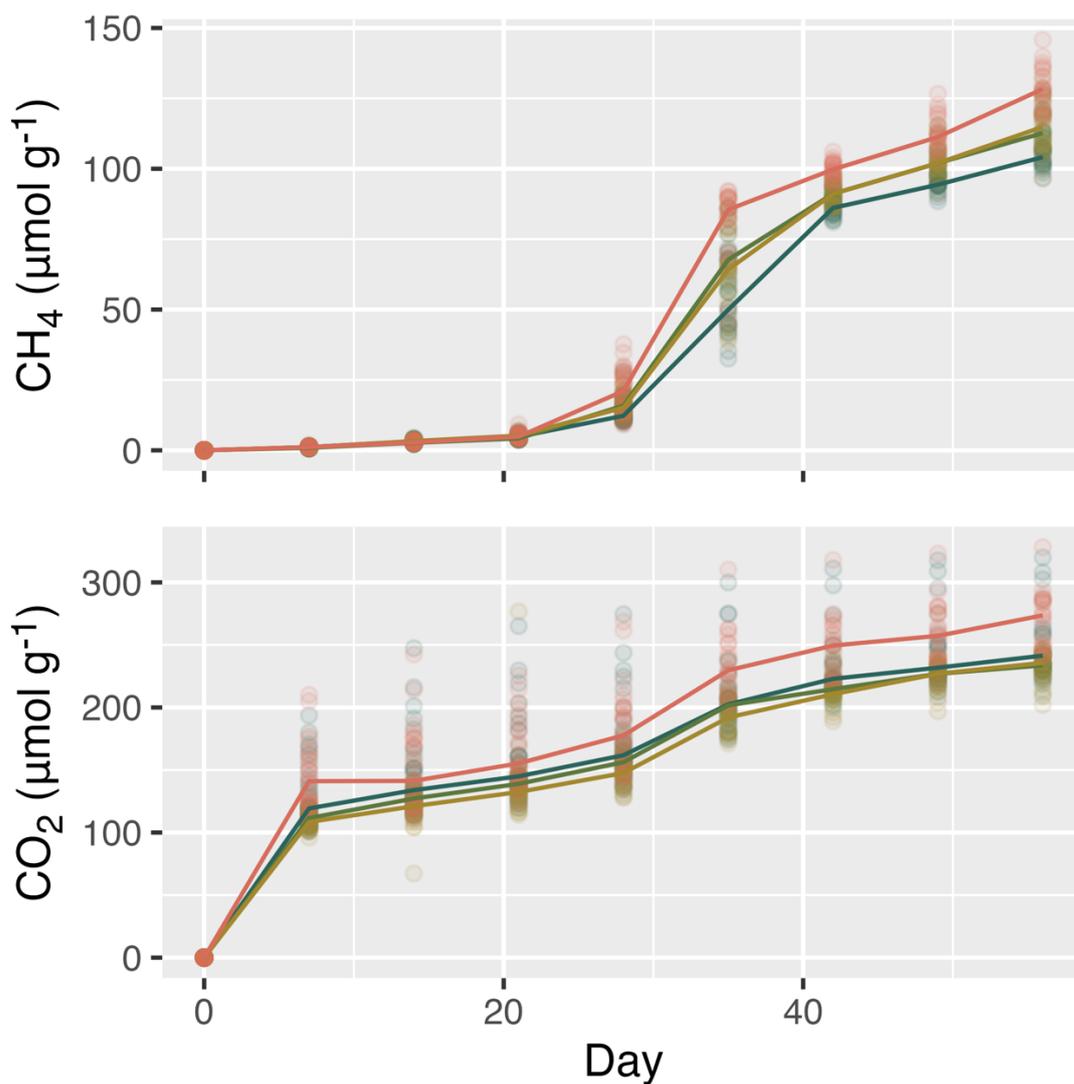
Figure S2. Rarefaction profile of prokaryotic sequences. Colored lines indicate individual samples.
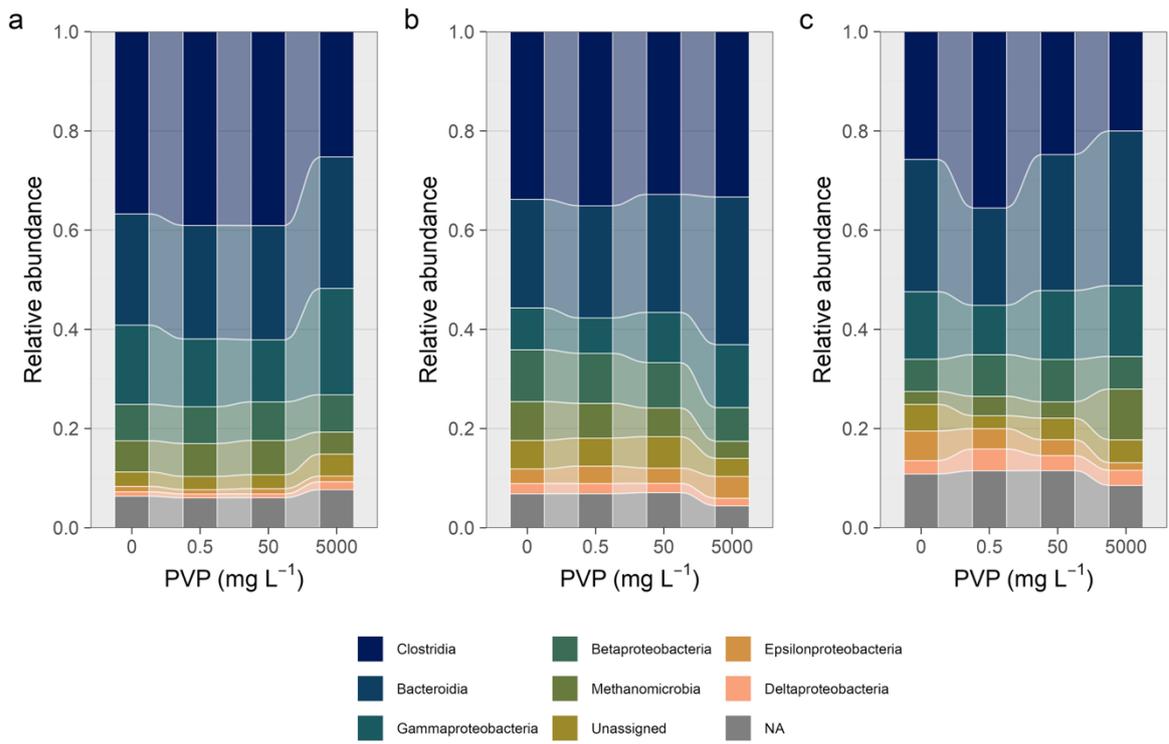
Figure S3. Sensitivity of posterior estimates to changes in prior parameters. The left column shows results when the prior mean is scaled, and the right column when the prior standard deviation is scaled, by factors of 2/3 (circles), 1 (squares), or 3/2 (diamonds). Each point represents the mean posterior estimate with 95% equal-tailed credible intervals. Rows correspond to the different parameters of interest.

Figure S4. Relative changes in predicted parameter estimates compared with the actual parameter changes used to generate synthetic data structurally equivalent to the measured data. The dashed line indicates perfect agreement between synthetic and predicted parameter changes.

Figure S5. Raw measurements of CH_4 (top) and CO_2 (bottom) headspace concentrations. Solid lines are shown solely to illustrate the progression of mean values over the 56-day incubation and do not represent a regression. PVP concentrations are indicated by color: light blue = control, green = 0.5 mg L^{-1}, ochre = 50 mg L^{-1}, red = 5,000 mg L^{-1}.

Figure S6. Relative abundance of prokaryotic classes in the control as well as under exposure to PVP, separated by samplings after (a) 7 days, (b) 28 days, and (c) 56 days.