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Global warming potentially enhanced both the viral production and decay in a tropical ocean

Wei Wei^{1,2}, Le Xie^{1,2}, Nianzhi Jiao^{1,2}, Yawei Luo^{1,2}, and Rui Zhang^{1,2}

¹State Key Laboratory of Marine Environmental Science, Institute of Marine Microbes and Ecospheres, Xiamen University, Xiamen 361102, PR China (wei017@163.com)

²College of Ocean and Earth Sciences, Xiamen University, Xiamen 361102, PR China

Investigating responses of marine viruses to the variation of climate change factors are essential to understanding the effect of global climate change on viral dynamics in the marine microbial food web and virus-mediated biogeochemical cycle. However, there are few studies on the effect of global warming on in situ viral communities in the tropical ocean. Therefore, we performed an experiment to explore the effect of warming on the dynamics of in situ viral community in South China Sea. Interestingly, as a tropical marine viral community, the production and decay rates were still increased by warming, and the balance between production and decay seemed to be broken, resulting in more accumulation of viral particles. As two subpopulations of marine viruses, low-fluorescence viruses may be more sensitive to warming than high-fluorescence viruses. In general, our study indicated for the first time that warming will accelerate the turnover of viruses in surface water of the tropical ocean, which may have positive effects on the efficiency of the BP and MCP.