



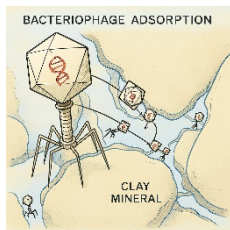
MSc thesis project:

Where are bacteriophages hiding?

Deciphering phage-soil sorption

It is now recognized that viruses, and bacteriophages in particular, are vital to soil ecosystems and functions. Soil components (e.g. organic matter, minerals) can be highly sorptive to phages and presumably affect infection rates, and therefore their biogeochemical influence. However, the interactions between soil components and phages are poorly understood.

This project aims to investigate the sorption of phages onto soil components and assess the implications in soil. We will first focus on sorption between phages and seven key minerals (quartz, kaolinite, montmorillonite, illite, ferrihydrite, goethite, birnessite) and model organic matter. Then we will test whether phage sorption to real soil corresponds to soil mineral composition and phage surface properties (such as electrostatic charge and hydrophobicity). Lastly, we will examine how phage infection rates are affected by the presence of these minerals.



Students will work at the interface of mineralogy and microbiology, and will also master skills in biophysics and soil science, while contributing to one of the most exciting frontiers of soil ecology. Students have the chance to innovate and immerse themselves in cutting-edge scientific ideas.

Candidates should have knowledge of biology, soil mineralogy, soil science or environmental sciences. Students with a strong curiosity about soil viruses and a passion for related research are highly encouraged to apply. The working language will be English. Students will be hosted in the Soil Microbial Interactions group in the Department of Geosciences (GUZ). Don't hesitate to contact Jun.-Prof. Kyle Mason-Jones at k.mason-jones@uni-tuebingen.de.