



Contribution ID: 31

Type: not specified

## How statistical physics limits microbial life under extreme conditions: foraging and motility

*Tuesday, 20 August 2024 15:00 (30 minutes)*

20-minute talk + 10-minute questions

The ability of cells to move - their motility - is important across a very wide range of species from eukaryotes, bacteria and archaea. Although their motility structures (such as cilia and flagella) evolved from different precursor organelles, the physical laws that constrain their performance are the same. Archaea in the deep subsurface environment offer the perfect test-bed for these ideas, at the low-energy limit. The extremophile halophilic archaea from Boulby Mine move slowly but deliberately, and are capable of sensing and responding to chemical gradients. By studying the swimming behaviour of archaea in 3D using digital holographic microscopy, we explore the limits at which microbial motility confers a selective advantage on cellular length and time scales.

**Presenter:** WILSON, Laurence

**Session Classification:** Deep Underground Microbiology Research