UNIVERSITÄT DUISBURG ESSEN

PHYSIK E=

Physikalisches Kolloquium

Mittwoch, 07.07.2021
13:00 Uhr
ZOOM-Online-Meeting

https://uni-due.zoom.us/j/61527991979?pwd=OHZyNktyRldiN1A2ZVhhb3Z5Q3F6dz09
Meeting-ID: 615 2799 1979, Kenncode: 614383

Non-equilibria for the Origin of Life

Prof. Dr. Dieter Braun,
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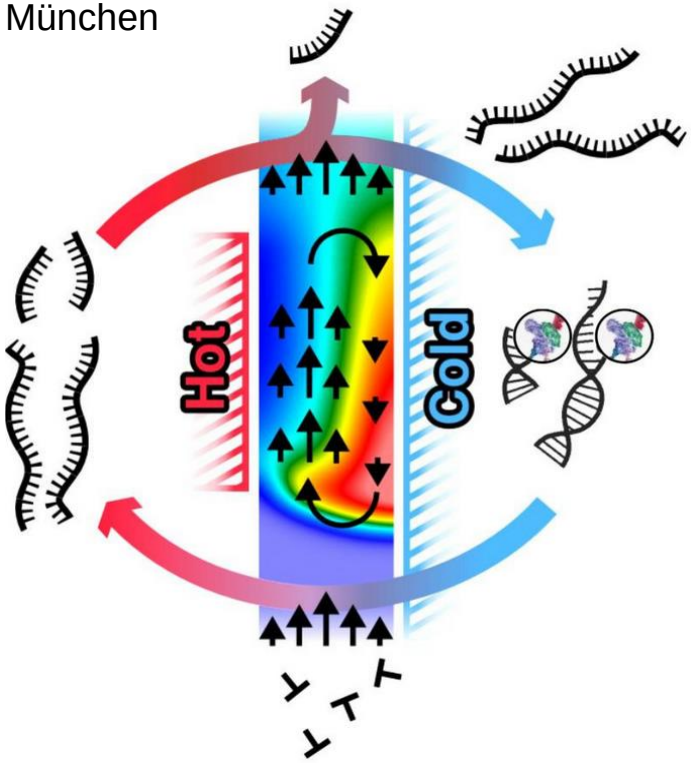

How could life emerge on the early Earth? Our experiments probe the first steps of molecular evolution by non-equilibrium experiments. Typically, we used millimeter-scaled temperature gradients, including the effects of air-water interfaces. These environments accumulate molecules, select them for length, enable the strand separation of RNA and allow continuous feeding of fresh molecules. Using sequencing, we see diverse pathways in sequence space for structure to emerge from randomness. These experimental findings make us better understand what are the pitfalls to establish an open ended evolution. In many cases still, these studies are still performed with the help of a protein, but we converge towards RNA only experiments, driven by hybridization, gravity, temperature to create the first autocatalytic networks for Darwinian evolution.