TITLE

Artwork: The Regeneration of the Earth After Its Destruction by the Capitalist Powers

Topic: Synthetic Ecology, HGT Simulation

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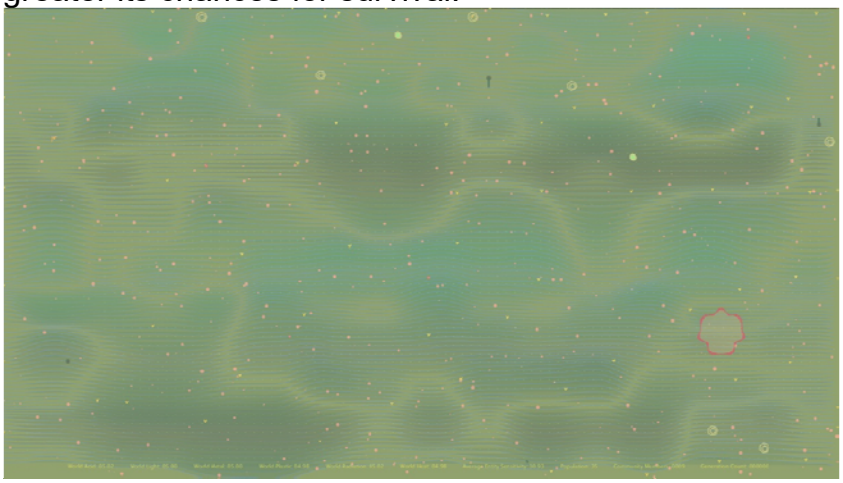
Abstract

The Regeneration of the Earth is an artwork that simulates the re-mergence of life on our planet after the sixth extinction. The system begins after life on planet Earth has ended. The world lies in darkness, engulfed by a toxic, acidic sludge. This hostile environment seeded with a small number of digital entities that exist as a random collection of energy profiles and genomic instructions. Members of this 'generation 0' are not guaranteed survival but, through horozontal gene transfer (conjugation, transformation, and transduction), are able to evolve and over time and may gain the ability to sense, move, mutate, replicate, compete, or co-operate. In *Regeneration*, entities that can evolve their instruction codes to develop multi-faceted genomes will gain greater sensitivity to co-habitants and to the world around them. A heightened sensitivity to their environment acts as a survival strategy. Ultimately, the more sensitive an entity is to its environment and its co-habitants, the greater its chances for survival.



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Keywords: synthetic ecology, origins of life, gene transfer

Main References:

[1] Ray, Thomas S. *Evolution, ecology and optimization of digital organisms.* Technical Report 92-08-042, Santa Fe Institute, Santa Fe, NM, 1992.

[2] Skippington, Elizabeth, and Mark A. Ragan. *"Lateral genetic transfer and the construction ofgenetic exchange communities."* FEMS microbiology reviews 35, no. 5 (2011): 707-735