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Interaction of localized convection cells in the bioconvection of *Euglena gracilis*[1] MAKOTO IIMA, TAKAYUKI YAMAGUCHI, Hiroshima University — *Euglena gracilis* is a unicellular flagellated photosynthetic alga. The suspension of *Euglena* has behavioral responses to light, which causes a macroscopic localized bioconvection pattern when illuminated from below. One of the fundamental structures of this is a pair of convection cells, and high cell density region exists in the middle of the pair[1]. Experimental studies show various types of interaction in the localized convection cells; bound state, collision, etc. We performed numerical simulation of a hydrodynamic model of this system, and show results of the interactions. Long-range interaction due to the conservation of cell number and merging process of two localized structures will be discussed. [1] "Localized Bioconvection Patterns and Their Initial State Dependency in Euglena gracilis Suspensions in an Annular Container", E. Shoji, et al. J. Phys. Soc. Jpn. 83, 043001 (2014)

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