Which has a better chemotaxis controller, E. coli or Paramecium?

Shun-ichi Azuma[1]
sazuma@i.kyoto-u.ac.jp

[1] Graduate School of Informatics, Kyoto University
Gokasho, Uji 611-0011, Japan

Keywords: chemotaxis, *E. coli*, *Paramecium, control performance*

In this presentation, we briefly review our recent result on the performance of the internal controllers generating the chemotaxis [1]. We show two performance indeces to capture the chemotaxis. Based on them, the performance is evaluated for two controller models, which are of model organisms for the chemotaxis, *Escherichia coli* and *Paramecia*. It is disclosed that the coli-type controller achieves the chemotaxis fast but roughly, while the paramecium-type controller achieves it slow but precisely.

[1] S. Azuma, *et al.*, Performance Analysis of Chemotaxis Controllers, *52nd IEEE Conference on Decision and Control, to appear* (2013)