

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Modeling phototaxis in complex networks OLGA KUKSENOK,
ANNA C. BALAZS, University of Pittsburgh — Phototaxis is the movement of organisms towards or away from light. It is one of the most important photo-biological processes, which in turn are responsible for light reception and the use of photons as a source of information. We briefly review current models of phototaxis of biological organisms and we develop a simple, minimal model for synthetic microscale units that can undergo phototactic motion. We then use this model to simulate the collective motion of such photosensitive artificial objects within a complex network, which is illuminated in a non-uniform manner by an external light.

Olga Kuksenok
University of Pittsburgh

Date submitted: 23 Nov 2005

Electronic form version 1.4