THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

AND

DEPARTMENT OF COMPUTER SCIENCE, UNIVERSITY OF TORONTO

BERNARD CHAZELLE

PRINCETON UNIVERSITY

Avner Magen Memorial Lecture

Why Algorithms are Poised to Become the Language of the Living World

May 31, 2013 • 11:00 a.m.

FIELDS INSTITUTE, 222 COLLEGE STREET

Just as physics speaks the language of mathematics, the new sciences of the 21st century speak the language of algorithms. The difference lies in the high descriptive complexity of the systems commonly found in social and biological organisms. While history plays virtually no role in physics, it is the distinguishing feature of the living world. Algorithms provide not only the expressivity needed to model complex living systems but also the analytical tools for their analyses. This (self-contained) talk will illustrate the power of "natural algorithms" by examining broad families of agent-based systems for which algorithmic tools can do what differential equations cannot.

For more information: www.fields.utoronto.ca

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