BRIGHAM AND WOMEN'S HOSPITAL

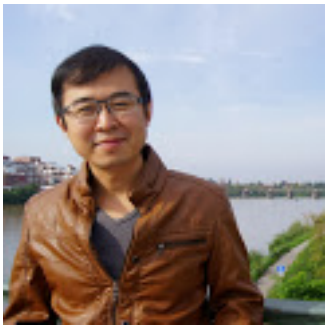
HARVARD MEDICAL SCHOOL

181 Longwood Avenue
Boston, Massachusetts 02115-5804

Department of Medicine
Channing Division of Network Medicine

Channing Network Science Seminar

Oct 30, 2015, 11am @ 5th floor conference room



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Finding shortest paths on networks based on quantum bosonic mechanism

Abstract: The problem of finding optimal paths has received considerable attention from the scientific community since it has found extensive applications in the fields of computer science, operations research, network routing and so on. Here I'd like to introduce a shortest-path algorithm from the quantum mechanics point of view. I'll show how to use the Green function of a hopping boson as a navigation pointer in the searching process. It is also suggested that a corresponding experiment is feasible on quantum optical networks, where the shortest paths can be found through local search without knowing the global network structure.

Bio: Dr. Xin Jiang is an assistant professor in the School of Mathematics and Systems Science at Beihang University where he has been a faculty member since 2012. Xin completed his Ph.D on Fundamental Mathematical Science at Beihang University. He used to be a DAAD Young Scientist with Professor Dieter W. Heermann in Heidelberg University. Currently he is a visiting scholar in the Department of Engineering Sciences and Applied Mathematics, Northwestern University. His research interests lie in the area of nonlinear dynamics on complex networks and network structure analysis. In recent years, he has focused on better applied mathematical techniques for engineering programs.

Hosted by Yang-Yu Liu