

When Percolation Meets Complex Networks



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Since the term ‘bond percolation’ was coined as a mathematical problem about half a century ago, the percolation theory has brought new perspective and understanding to a wide range of topics in physics, materials science, geology, forestry, epidemiology, complex network theory and so on. On the other hand, the complex network theory is still young and active, just starting extensively two decades ago with plenty of large data thanks to the invention of Internet and spread of high-performance PCs. In recent years, abundant empirical researches on real-world networks such as computer and technological networks (Internet, WWW, software dependence, power grid), social networks, and biological networks (protein interaction, metabolism, brain connectivity) provide us useful viewpoints about surrounding infrastructures, society, and even for life. In this Colloquium, I will talk about how the percolation theory successfully explains the birth and breakdown of complex networks, and briefly introduce the recent progress in this field.

Anyoung haseyo (Hi in Korean),

My name is Seung-Woo Son, a visiting professor from Hanyang University, South Korea.

My research interest is dynamics and emergent behaviors in various complex systems like our brain, society, and the Earth. Keywords such as percolation, synchronization, complex networks, phase transition, critical phenomena, and data science would be the blown-up ones in a tag cloud describing my academic life.

Seven years ago, I was a post-doc here at U of C, in the Complexity Science Group, from December 2009 to 2011. It is a sweet memory to me. That’s why I am spending my first sabbatical year here in Calgary.

See you soon!

Friday, September 14
Science B 146
4:00 pm

