



## New Approach to Vertex Connectivity Could Maximize Network Bandwidth

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best possible speed of information flow. "We want to be able to spread as much information as possible per unit of time, to create faster and faster networks," Ghaffari says. "And when a graph has a better vertex connectivity, it allows a larger flow [of information]," he adds.

### Applications in assessing robustness

The researchers can also use their new approach to analyze the robustness of a network against random failures. "These new techniques also allow us to analyze whether a network is likely to remain connected when its nodes fail randomly with some given probability," Ghaffari says. "Reliability against random edge failures is well understood, but we knew much less about that against node failures," he adds.

### Additional background

Reliable communication, unreliable networks <http://web.mit.edu/newsoffice/2013/reliable-communication-unreliable-networks-0806.html> [1]

Explained: Graphs <http://web.mit.edu/newsoffice/2012/explained-graphs-computer-science-1217.html> [2]

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<http://www.scientificcomputing.com/news/2013/12/new-approach-vertex-connectivity-could-maximize-network-bandwidth>

### Links:

[1] <http://mit.pr-optout.com/Tracking.aspx?Data=HHL%3d8%2c60%403-%3eLCE9%3b4%3b8%3f%26SDG%3c90%3a.&RE=MC&RI=3794938&Preview=False&DistributionActionID=18094&Action=Follow+Link>

[2] <http://mit.pr-optout.com/Tracking.aspx?Data=HHL%3d8%2c60%403-%3eLCE9%3b4%3b8%3f%26SDG%3c90%3a.&RE=MC&RI=3794938&Preview=False&DistributionActionID=18093&Action=Follow+Link>