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Space information network congestion monitoring based on compressed sensing. (Chinese. English summary) [Zbl 1389.94008](#)

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Summary: In space information network, satellites are connected through inter satellite links. High-queueing-delay, which is caused by the restriction of the spatial network node and the dynamic network topology as well as the intermittent connectivity of communication link, is often observed among spatial network node. It means that network congestion and even packet loss occur and result in low reliability of data transmission. Aiming at realizing network congestion monitoring efficiently and accurately, this paper analyzes the sparsity of links in space information network, and the link state detection is modeled as a compressed sensing problem. Based on greedy algorithm, the paper obtains the link delay and the location of congestion links. Numerical results show that the algorithm can recover the link delay with high accuracy in the case of less sample data.

MSC:

[94A05](#) Communication theory

[90B18](#) Communication networks in operations research

Keywords:

[congestion monitoring](#); [compressed sensing](#); [greedy algorithm](#)

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