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Dynamic analysis of rumor spreading model for considering active network nodes and nonlinear spreading rate

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***Highlights (for review)**

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1) We firstly introduce a modified ISR rumor spreading model on heterogeneous networks.

2) We derive the mean field equations with considering nonlinear spreading rate and active network nodes.

3) we calculate the basic reproduction number R0 based on the next generation matrix method.

4) It is very important to consider the internal and external factors to control the spread of the rumors.

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