A linear nonlocal model for outbreak of COVID-19 and parameter identification

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The novel corona virus pneumonia (COVID-19) is a major event in the world. Whether we can establish the mathematical models to describe then characteristics of epidemic spread and evaluate the effectiveness of the control measures we have taken is a question of concern. From January 26, 2020, our team began to conduct research on the modeling of new crown epidemic. A kind of linear nonlocal dynamical system model with time delay is proposed to describe the development of covid-19 epidemic. Based on the public data published by the government, the information of transmission rate, isolation rate and other information, which may not be directly observed in the process of epidemic development is obtained through inversion method, and on the basis of that, a "reasonable" prediction of the development of the epidemic is made. To provide some reasonable data support for government decision-making and various needs of the public.