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Nota di contenuto	Chapter 1. Introduction and Literature Survey -- Chapter 2. Preliminaries of Network Control System and Sliding Mode Control -- Chapter 3. Design of Discrete-Time Sliding Mode Controller (Switching Type) for Fractional Delay -- Chapter 4. Design of Discrete-Time Sliding Mode Controller (Non-Switching Type) for Fractional Delay -- Chapter 5. Multirate Output Feedback Discrete-Time Sliding Mode Controller for Fractional Delay Compensation -- Chapter 6. Discrete-Time Sliding Mode Controller for Random Fractional Delays and Packet Loss -- Chapter 7. Discrete-Time Networked Sliding Mode Control (DNSMC) with Multiple Packet Transmission Policy -- Chapter 8. Conclusion, Future Scope and Challenges.
Sommario/riassunto	This book presents novel algorithms for designing Discrete-Time Sliding Mode Controllers (DSMCs) for Networked Control Systems (NCSs) with both types of fractional delays namely deterministic delay

and random delay along with different packet loss conditions such as single packet loss and multiple packet loss that occur within the sampling period. Firstly, the switching type and non-switching type algorithms developed for the deterministic type fractional delay where the delay is compensated using Thiran's approximation technique. A modified discrete-time sliding surface is proposed to derive the discrete-time sliding mode control algorithms. The algorithm is further extended for the random fractional delay with single packet loss and multiple packet loss situations. The random fractional delay is modelled using Poisson's distribution function and packet loss is modelled by means of Bernoulli's function. The condition for closed loop stability in all above situations are derived using the Lyapunov function. Lastly, the efficacy of the proposed DSMC algorithms are demonstrated by extensive simulations and also experimentally validated on a servo system.