1. Record Nr. UNINA9910483430103321 Autore Shao Shuyi Titolo Robust discrete-time flight control of UAV with external disturbances / / Shuyi Shao, Mou Chen, Peng Shi Pubbl/distr/stampa Cham, Switzerland: ,: Springer, , [2021] ©2021 **ISBN** 3-030-57957-3 Edizione [1st ed. 2021.] Descrizione fisica 1 online resource (XVI, 207 p. 97 illus., 62 illus. in color.) Collana Studies in systems, decision and control;; Volume 317 Disciplina 629.135 Soggetti Drone aircraft - Control systems Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Sommario/riassunto This book studies selected discrete-time flight control schemes for fixed-wing unmanned aerial vehicle (UAV) systems in the presence of system uncertainties, external disturbances and input saturation. The main contributions of this book for UAV systems are as follows: (i) the proposed integer-order discrete-time control schemes are based on the designed discrete-time disturbance observers (DTDOs) and the neural network (NN); and (ii) the fractional-order discrete-time control schemes are developed by using the fractional-order calculus theory, the NN and the DTDOs. The book offers readers a good understanding of how to establish discrete-time tracking control schemes for fixedwing UAV systems subject to system uncertainties, external wind

disturbances and input saturation. It represents a valuable reference guide for academic research on uncertain UAV systems, and can also support advanced / Ph.D. studies on control theory and engineering.