Timothy Sands, Adv Robot Autom 2017, 6:2 (Suppl)
DOI: 10.4172/2168-9695-C1-007

Timothy Sands

Naval Postgraduate School, USA

Automated mechanical control

Automated control courses tend to strongly emphasize feedback control while minimizing or neglecting treatment of feed-forward controls which leads to systems that contain inherent lagging controllers. Furthermore, neglecting feed-forward controls restrict engineers from taking advantage of adaptive feed-forward techniques often adapt control commands based upon errors tracking trajectories and/or estimation errors. Direct adaptive control techniques typically directly adapt the control signal without translation of estimated parameters. Indirect adaptive control techniques indirectly adapt the control signal by translating the estimates of unknown system parameters to formulate a control signal. The adaptation rule is derived using a proof that demonstrates the elimination of tracking errors (the true objective) and demonstrates stability, which is complicated by the nonlinear closed loop system. This presentation will elaborate on such techniques applied to rotational mechanics with time-varying mass

Biography

Timothy Sands has completed his PhD at the Naval Postgraduate School and Postdoctoral studies at Stanford University and Columbia University, USA. He is an Associate Dean of the Naval Postgraduate School's Graduate School of Engineering and Applied Science. He has previously served as a Chief Academic Officer, Dean and Senior Military Professor of the Air Force Institute of Technology. He has published research prolifically in archival journals, conference proceedings, book chapter and holds one patent in spacecraft attitude control.

tasands@nps.edu

Notes: