











- approach. *Automatica*, 32(1): 109-115. [https://doi.org/10.1016/0005-1098\(95\)00096-8](https://doi.org/10.1016/0005-1098(95)00096-8)
- [10] Weigl, H.J., Paduano, J.D., Bright, M.M. (1997). Application of  $H_{\infty}$  control with eigenvalue perturbations to stabilize a transonic compressor. In *Proceedings of the 1997 IEEE International Conference on Control Applications*, Hartford, CT, USA. <https://doi.org/10.1109/CCA.1997.627739>
- [11] Bartolini, G., Muntoni, A., Pisano, A., Usai, E. (2008). Compressor surge active control via throttle and CCV actuators. A second-order sliding-mode approach. 2008 International Workshop on Variable Structure Systems, Antalya, Turkey. <http://dx.doi.org/10.1109/VSS.2008.4570720>
- [12] Shehata, R.S., Abdullah, H.A., Areed, F.F.G. (2009). Variable structure surge control for constant speed centrifugal compressors. *Control Engineering Practice*, 17(7): 815-833. <https://doi.org/10.1016/j.conengprac.2009.02.002>
- [13] Laderman, M., Greatrix, D., Liu, G. (2003). Fuzzy logic control of surge in a jet engine model. The 13th propulsion symposium, 50th CASI annual conference, Montreal.
- [14] Torrisi, G., Grammatico, S., Cortinovis, A., Mercangöz, M., Morari, M., Smith, R.S. (2017). Model predictive approaches for active surge control in centrifugal compressors. *IEEE Transactions on Control Systems Technology*, 25(6): 1947-1960. <https://doi.org/10.1109/TCST.2016.2636027>
- [15] Wang, C.X., Shao, C., Han, Y. (2010). Centrifugal compressor surge control using nonlinear model predictive control based on LS-SVM. 2010 3rd International Symposium on Systems and Control in Aeronautics and Astronautics, Harbin, China. <https://doi.org/10.1109/ISSCAA.2010.5633206>
- [16] Sanadgol, D., Maslen, E. (2005). Effects of actuator dynamics in active control of surge with magnetic thrust bearing actuation. *Proceedings, 2005 IEEE/ASME International Conference on Advanced Intelligent Mechatronics*, Monterey, CA, USA. <https://doi.org/10.1109/AIM.2005.1511155>
- [17] Fontaine, D., Shengfang, L., Paduano, J., Kokotovic, P.V. (2004). Nonlinear control experiments on an axial flow compressor. *IEEE Transactions on Control Systems Technology*, 12(5): 683-693. <https://doi.org/10.1109/TCST.2004.826967>
- [18] Camp, T.R., Day, I.J. (1998). A study of spike and modal stall phenomena in a low-speed axial compressor. *Journal of Turbomachinery*, 120(3): 393-401. <https://doi.org/10.1115/1.2841730>
- [19] Balchen, J.G., Mumme, K.I. (1987). *Process control: Structures and applications*. VanNostrand and Reinhold Company, 640.
- [20] Behnken, R.L., Murray, R.M. (1997). Combined air injection control of rotating stall and bleed valve control of surge. *Proceedings of the 1997 American Control Conference*, Albuquerque, NM, USA. <https://doi.org/10.1109/ACC.1997.609674>
- [21] Willems, F., Heemels, W.P.M.H., de Jager, B., Stoorvogel, A.A. (2002). Positive feedback stabilization of centrifugal compressor surge. *Automatica*, 38(2): 311-318. [https://doi.org/10.1016/S0005-1098\(01\)00202-3](https://doi.org/10.1016/S0005-1098(01)00202-3)