Reply on CC1
Yichao Liu et al.

Author comment on "Load reduction for wind turbines: an output constrained, subspace predictive repetitive control approach" by Yichao Liu et al., Wind Energ. Sci. Discuss., https://doi.org/10.5194/wes-2021-2-AC1, 2021

Dear Ervin,

Thank you for your compliments and comment. We agree that with traditional PI-based IPC, augmented with some deadbands, you might be able to achieve something similar. However, we have not found something like this in literature and most likely it would be cumbersome to tune. If you have done something like this in industry, we would love to challenge you to write a paper about this and include the tuning procedure in the paper.

We would like to stress that the proposed method: 1) can directly minimize a cost function, 2) is predictive 3) can be used directly in a MIMO setting (no need for decoupling) 4) has more degrees of freedom than a PID controller (depending on the windows used) 5) can directly be made adaptive without increasing the complexity. To conclude, we agree that many control-engineering challenges can (still) be solved with PID controllers but we are approaching an era in which we have to go beyond PID and the method proposed is a candidate that can take over the role of PID control in the near future.

With kind regards,
Jan-Willem (also on behalf of the other authors)