

Proposal for changing the BS realtime model

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2018 Jan. 14th

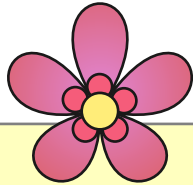
Background

The BS optical lever control needs hierarchical control [1][2].

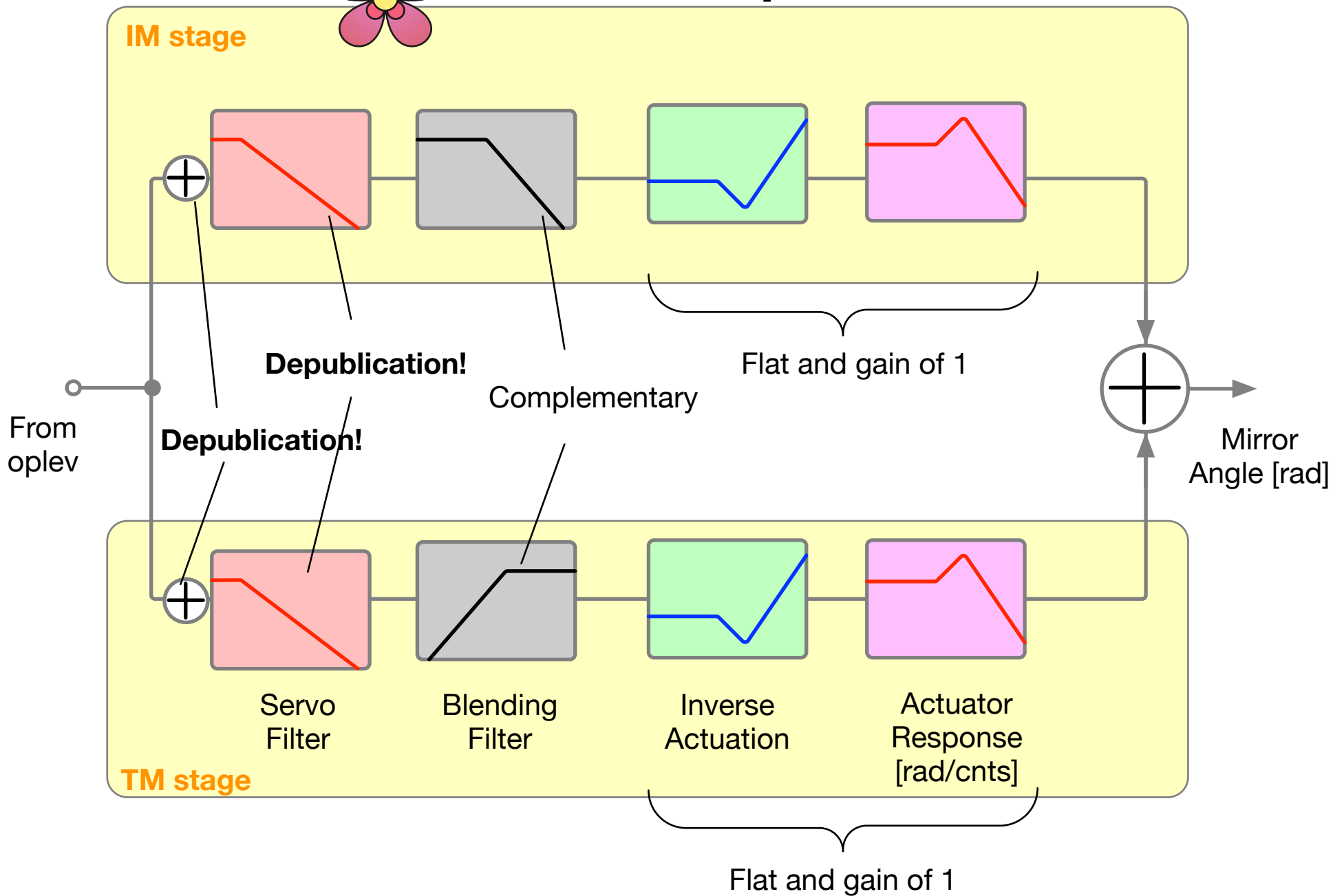
The control topology is that the error signal is derived from one of the optical lever QPDs which is then sent to both IM and TM stages simultaneously to control the angle of the BS mirror from DC to a few Hz.

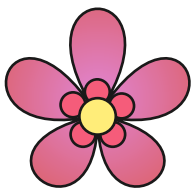
<http://klog.icrr.u-tokyo.ac.jp/osl/?r=3838>

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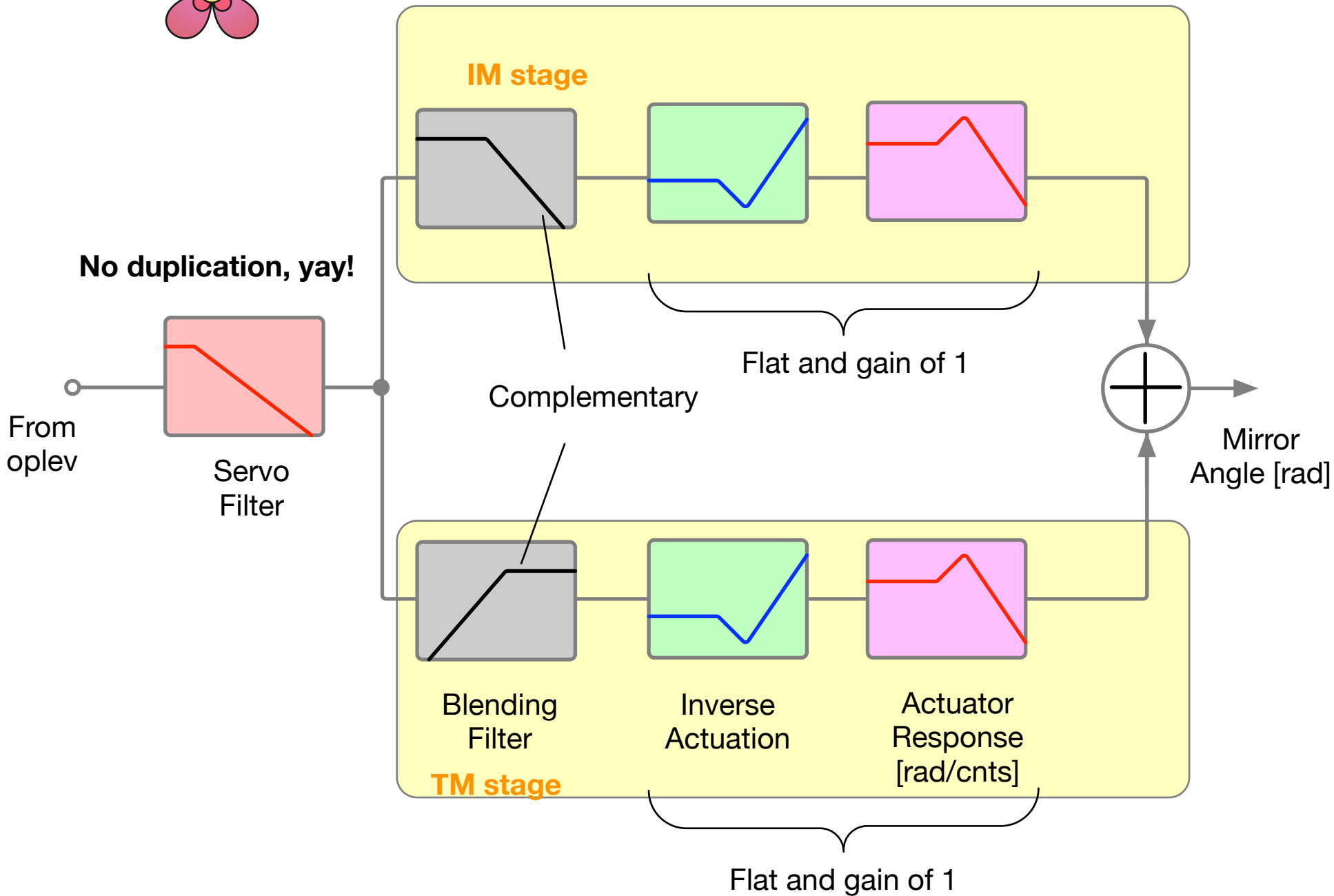


How it is implemented now





Proposed version



What I want

1. I want a common filter right after the oplev QPDs before the signal is branched to the two stages.

=> This should be commonly used for Type-Bp and Type-B.

2. Additionally, I want a pair of EPICS channels representing the diagonalized PIT and YAW.

=> This is special for BS only.

=> Do we want to propagate this to the other suspensions?[3]

=> See the next page for proposed pick off point.

[3] Editing TM_MASTER (i.e., the simulink library that contains the oplev filters and matrices) affects not only the BS but also other Type-Bs and Type-Bps.

Diagonalized oplev channels



How about adding these
EPICS test points ?

OPLEV_PIT_DIAG

OPLEV_YAW_DIAG

OPLEV_LEN_DIAG