

# Physical Human Robot Interaction

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October 21, 2021

## Contents

<b>1</b>	<b>Four channel bilateral teleoperation architecture</b>	<b>1</b>
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## **1 Four channel bilateral teleoperation architecture**

Implement the SISO Four-channel bilateral teleoperation architecture with

$$C_m = B_m + \frac{K_m}{s} \quad C_s = B_s + \frac{K_s}{s}$$
$$Z_m^{-1} = \frac{1}{M_m s + D_m} \quad Z_s^{-1} = \frac{1}{M_s s + D_s}$$

where  $M_m = 0.5$ ,  $M_s = 2$ . Moreover  $D_s = 10$  and  $D_m = 5$  or both zero in the initial case.