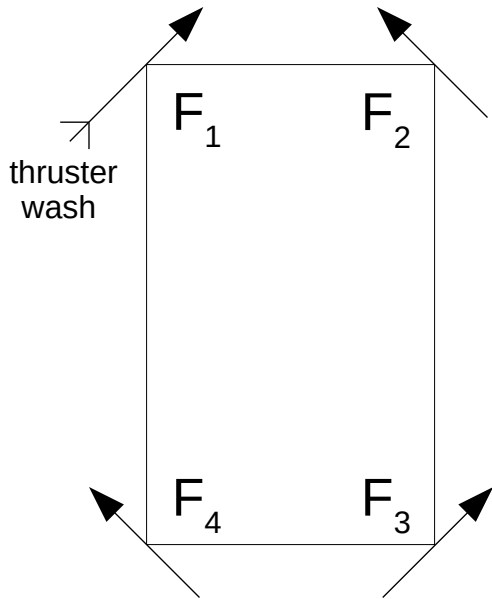


MBARI mode



- If $F_1 < 0$ or $F_2 < 0$ then there will be forward thruster wash
- Goal of MBARI mode is to make $F_1 \geq 0$ and $F_2 \geq 0$
- Logic

$$\Delta F = \text{ABS}(\text{MIN}(0, F_1, F_2))$$

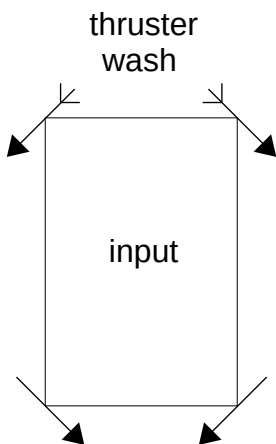
$$F_1 = F_{1\text{-input}} + \Delta F$$

$$F_2 = F_{2\text{-input}} + \Delta F$$

$$F_3 = F_{3\text{-input}} - \Delta F$$

$$F_4 = F_{4\text{-input}} - \Delta F$$

Example:

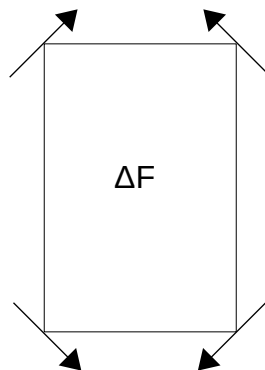


$$F_{1\text{-input}} = -30$$

$$F_{2\text{-input}} = -45$$

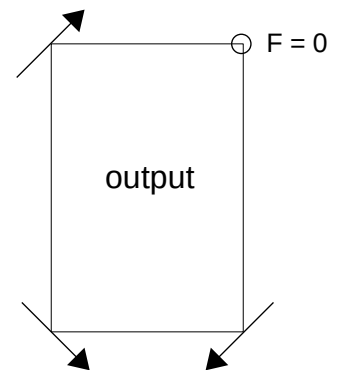
$$F_{3\text{-input}} = -30$$

$$F_{4\text{-input}} = -45$$



$$\Delta F = \text{ABS}(\text{MIN}(0, -30, -45))$$

$$\Delta F = 45$$



$$F_1 = 15$$

$$F_2 = 0$$

$$F_3 = -75$$

$$F_4 = -90$$

note: if $F_1 - F_4 > 100\%$ then output thrust must be scaled accordingly

Title: Doc Ricketts MBARI mode

Date: February 1, 2022

By: Mike Risi

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