

# DRMI Noise Budget Overview

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# DRMI Optical Configuration

## EOM Modulation:

$F_1 = 9099385 \text{ Hz}$

$\Gamma_1 = 0.26$

$F_2 = 45496925 \text{ Hz}$

$\Gamma_2 = 0.3$



REFL port

PR3



PRM



PR2



ITMY



BS



ITMX



SR2



SRM



SR3



AS port



OMC



OMC DC



## Seismic isolation status:

**ISI:** HAMs run level 2 isolation loops, BSCs run level 3 on ST1 blending CPS/T240/L4C and level 1 for X, Y and RZ on ST2

**HEPI:** HAMs are locked, BSCs run position sensor loops

Angular controls run 3 WFS loops in pitch and yaw + PR3 cage servo

RF sensors: REFL\_A\_9I,  
REFL\_B\_9I, AS\_45Q

## Actuators:

PR2 (UGF=5Hz),  
BS (UGF=2Hz)

## DRMI Sideband Sensing:

REFL9I -> PRCL

REFL9Q -> MICH

REFL45I -> SRCL

## PRMI Carrier Sensing:

REFL9I -> PRCL

OMC DC -> MICH

## Actuation:

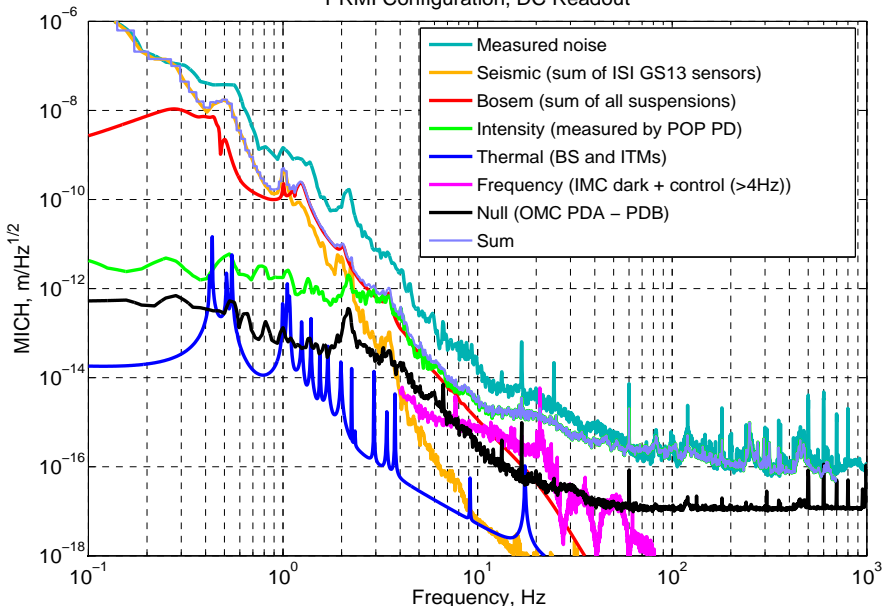
PRCL -> PRM, PR2 (UGF=100Hz)

MICH -> BS (UGF=10Hz)

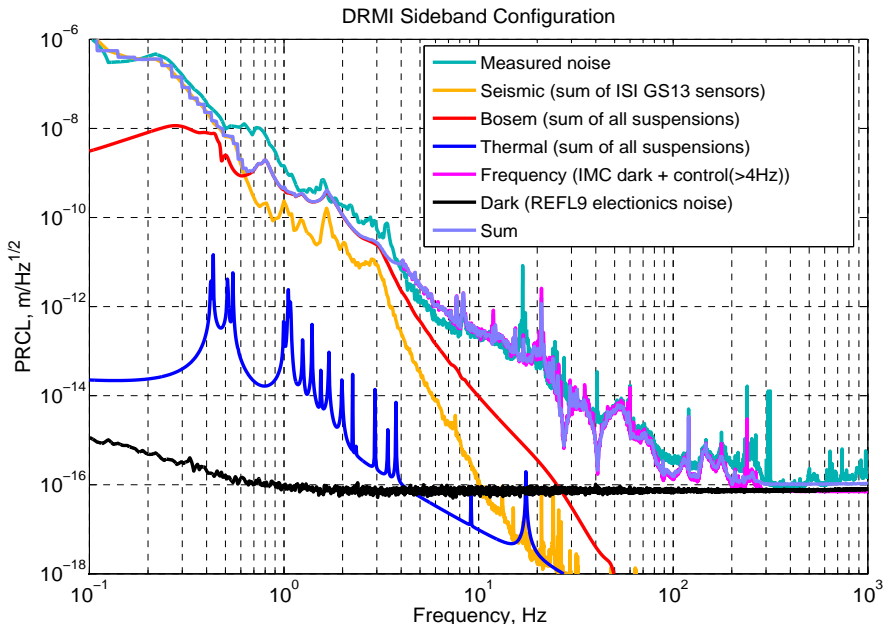
SRCL -> SRM, SR2 (UGF=30Hz)

# MICH Noise Budget (input power=5W, offset=1.5nm)

PRMI Configuration, DC Readout



# PRCL Noise Budget (input power=1W, PRC build up=30)



# SRCL Noise Budget (input power=1W, PRC build up=30)

