

Optickle: Function Reference

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Abstract

Optickle is a general model for the electro-opto-mechanical part of an interferometric GW detector. It ventures into mechanics only as far as is necessary to include radiation pressure effects, and into electronics only far enough to produce demodulation signals, and into

2.1 Initializing a New Model

Creating a new Optickle model is easy. Like any other class, you need only call the class constructor, which is a function with the class as its name.

```
opt = t wi6ikle(vFrf, lambda)
```

[opt, sn] = addBeamSplitter(opt, name, aio, Chr, Thr, Lhr, Rar, Lmd, Nmd)

aio angle of incidence (in degrees)
Chr curvature of HR surface (Chr = 1 / radius of curvature)
Thr power transmission of HR surface
Lhr power loss on re^oection from HR surface
Rar power re^oection of AR surface
Nmd

opt = addReadout(opt, name, fphi, names)

fphi

outName

$n = 14(\text{inoutName}(\text{opt},) - 357(\text{name},) - 358(\text{uname})) \text{]TJET0.4w84.42-137.53271132.42-137.1.46TD}[(\text{outName})\text{]TJ/F97239.24.}$

$n = \text{getFieldIn}(\text{opt}, \text{name}, \text{inName}, \text{outName})$

name name of the optic

inName name of an input to the optic

n index of input field (e.g., in fDC returned from tickle)

$n = \text{getFieldOut}(\text{opt}, \text{name}, \text{outName})$

name name of the optic

outName name of an output from the optic

name = getProbeName(opt, snPrb)

opt = addDriveO[@]set(opt, nDrv, pos)

$[fDC, sigDC] = sweep(opt, pos)$

pos

3.1 BeamSplitter

[FIGURE OF MIRROR]

Mirrors can be used for everything from core interferometer optics

getInputs getOutputs for this optic, as seen at itsgetOutputsgetNoiseMatrix

getNoiseMatrix