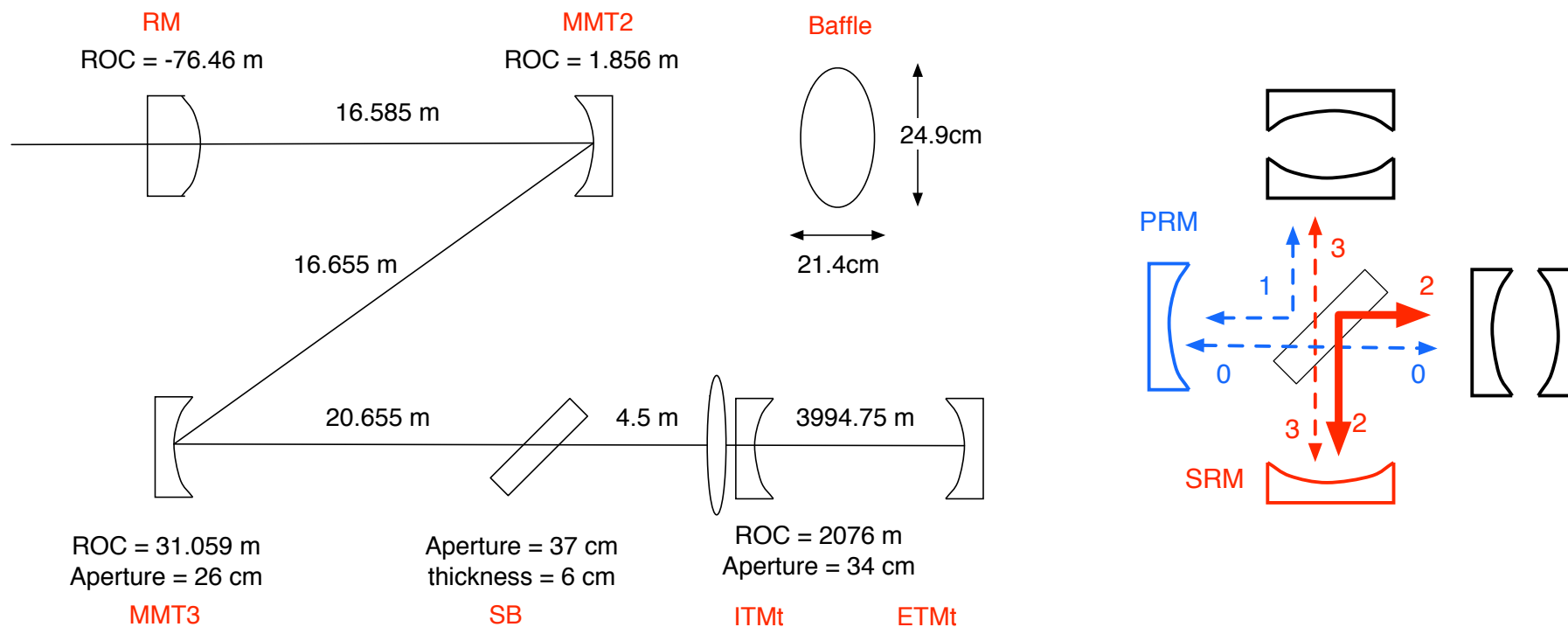


Beam size effect on Signal Loss

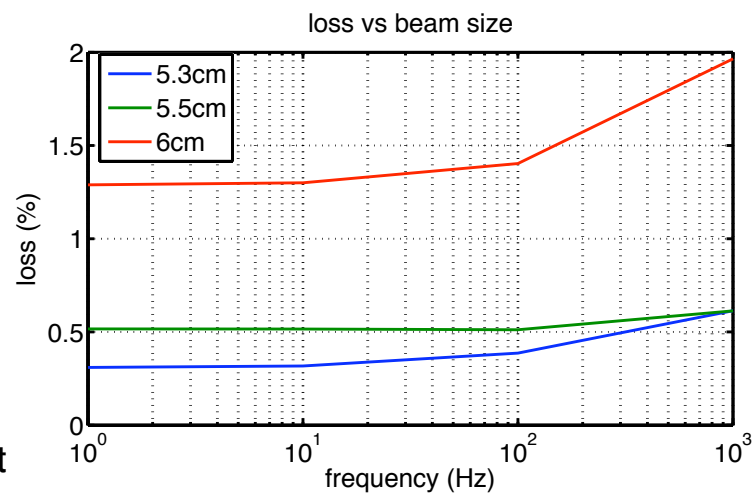
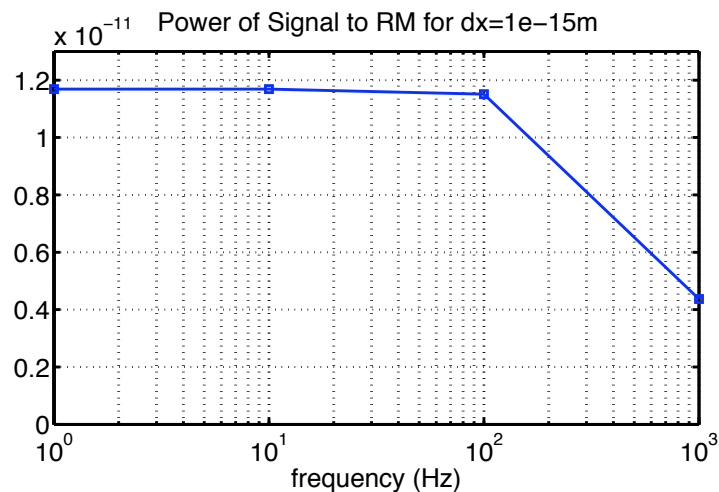
Hiro Yamamoto



Optic:	Beam Size	PRM	PR2	PR3	SRM	SR2	SR1	ITM	ETM
ROC(m):	5.55 cm	11.37	-1.48	34	-15.0	-3.261	34	1971	2191
ROC (m):	5.31 cm	11.63	-1.491	34	-18.35	-3.258	34	1935	2243
ROC (m):	5.956cm	10.98	-1.451	34	-11.755	-3.256	34	2076	2076

Loss

- lock by injecting CR from RM
- add $\pi/4$ to Michelson cavity
- shake ETM
- calculate 00 mode to RM
- loss = $1 - E_{00}/E_{00}(\text{max})$
- $E_{00}(\text{max}) : 5.55\text{cm}$
ROCs with large optics



power loss on BS and SR3

$$\text{loss}(\text{SR3}) = 1 - \text{power}(\text{from SR3 to BS}) / \text{power}(\text{to SR3 from SR2})$$

$$\text{loss}(\text{BS}) = 1 - \text{power}(\text{from BS to SR3}) / \text{power}(\text{to BS from ITM})$$

	CR loss (ppm)		Signal loss (ppm)	
	SR3	BS	SR3	BS
6cm	257	2079	325	31.5
5.5cm	62.1	757	142	12.0
5.3cm	38.1	375	44.1	5.41

