

Frequency fluctuation effects general

$$\frac{\Delta f}{f} = - \frac{\Delta L}{L} - \frac{\Delta n}{n} + \delta_{\text{lock}}$$

Effects of fluctuation	Part of fluctuation	Reduction of effect	Measurement method
Vibration	$\frac{\Delta L}{L}$	stable mounting design & passive/active vibration isolation	
Temperature		thermal isolation from environment: temperature stabilized vacuum chamber & heat shields	
Acoustic		acoustic isolation box & vacuum chamber	
Intensity		intensity stabilization	
Vacuum	$\frac{\Delta n}{n}$	low pressure & stable pressure	
Lock PDH	δ_{lock}	temperature stabilization of EOM & using Glan thompson polarizer	
Lock RAM			
Beam pointing	?		
Brownian noise	?	<color #ff0000>see XX</fc>	

From:
<https://iqwiki.iqo.uni-hannover.de/> - IQwiki

Permanent link:
https://iqwiki.iqo.uni-hannover.de/doku.php?id=groups:mg:private:resonatoren:frequency_flactuation_effects_general&rev=1710927339

Last update: 2024/03/20 09:35

