

Weekly Report

2018-09-17

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SQUID Test

- Supracon Type 1 CE1K2S
 - “Jena”
- Sep. 3rd ~ 9th : SQUID test data analysis
 - Compare with the spec provided by the manufacturer

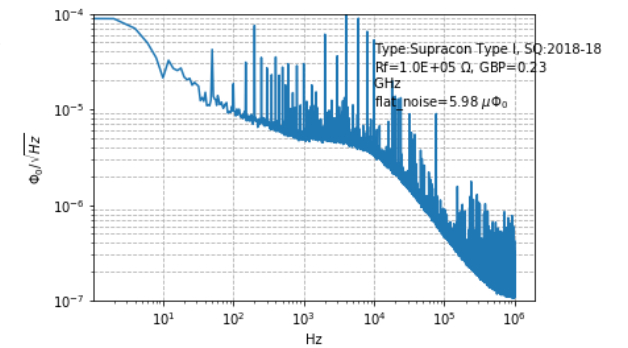
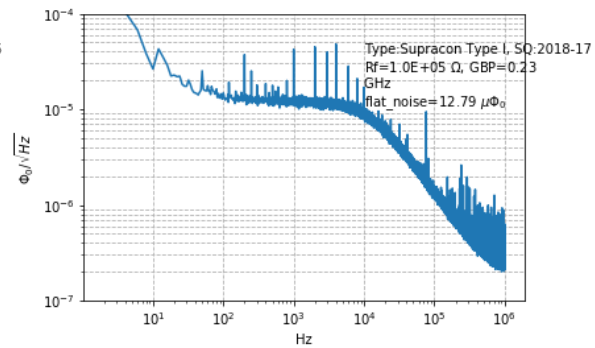
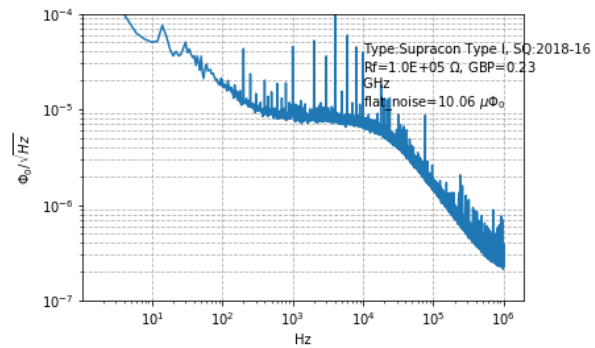
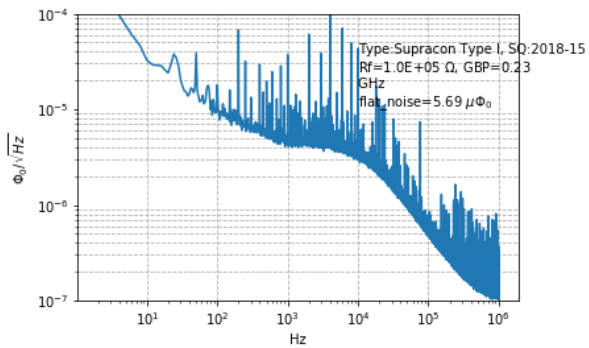
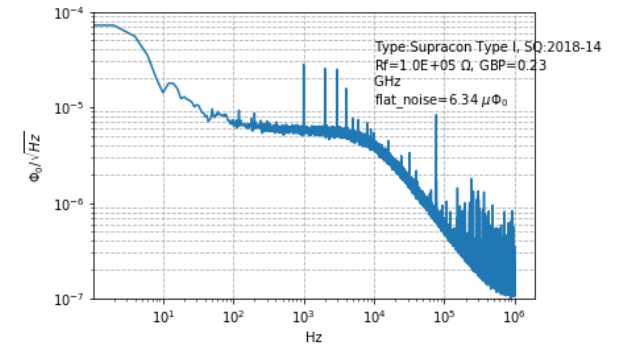
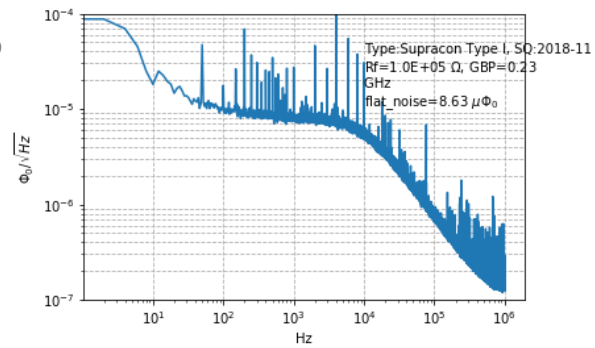
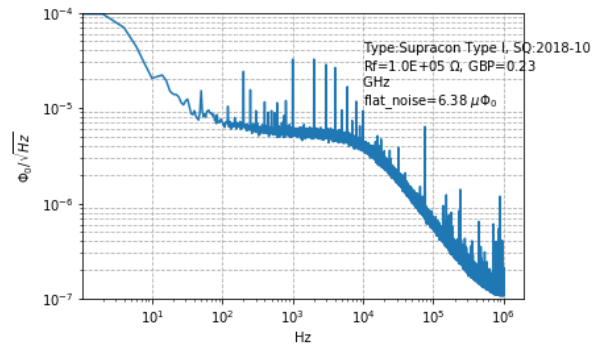
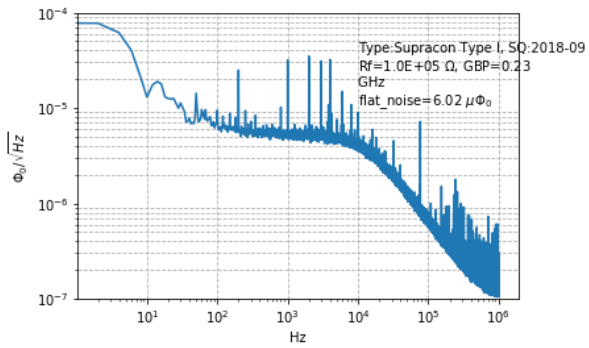
	Parameter	Value	Unit
4.2K (open input coil)	critical current I_c	17,3	μA
	SQUID resistance R_n	4,23	Ω
	voltage swing ΔV	54,3	μV
	flux feedback coupling ΔI_{MOD}	19,1	μA
	input coupling ΔI_{EK}	1,56	μA
	equivalent flux noise	2,1	$\mu \phi_n / Hz^{1/2}$
300K (room temperature)	input coil	0,45	k Ω
	SQUID	110	Ω
	flux feedback coil	1,45	k Ω
	heater	40	Ω

The sensor fabrication process is qualified by a quality management system ISO 9001:2015.



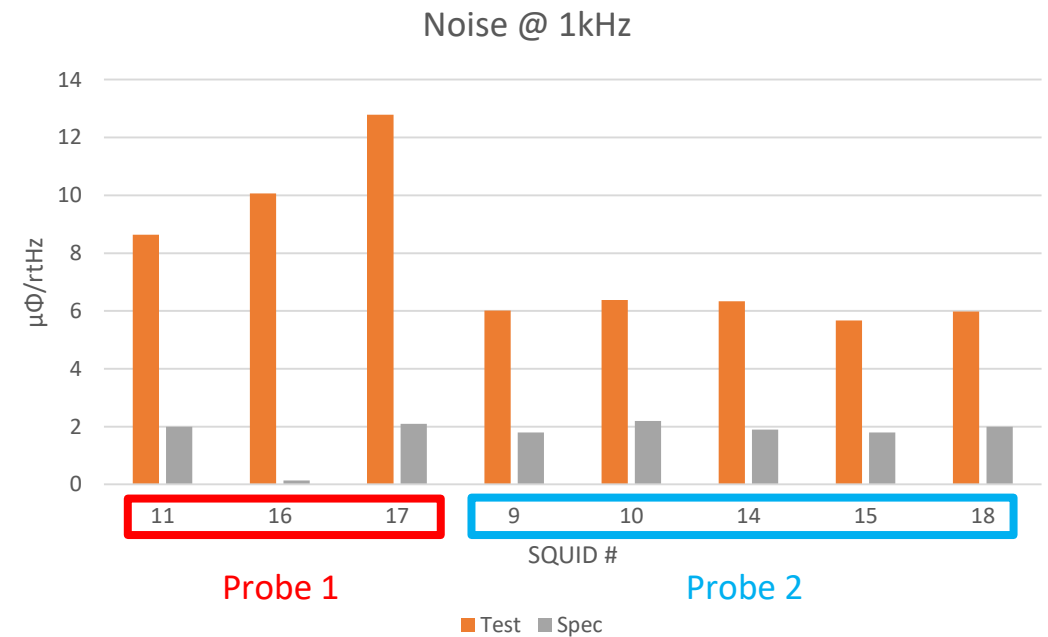
SQUID Test

Noise Spectrum:



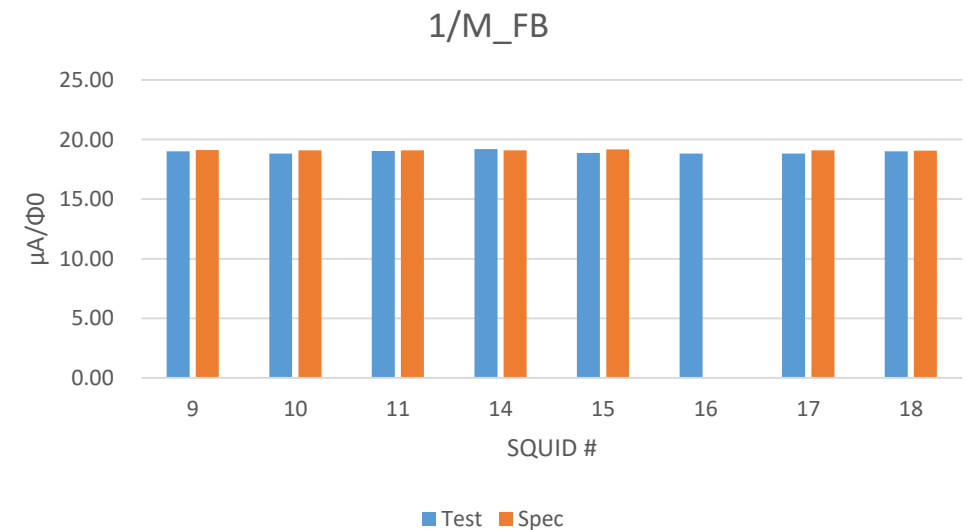
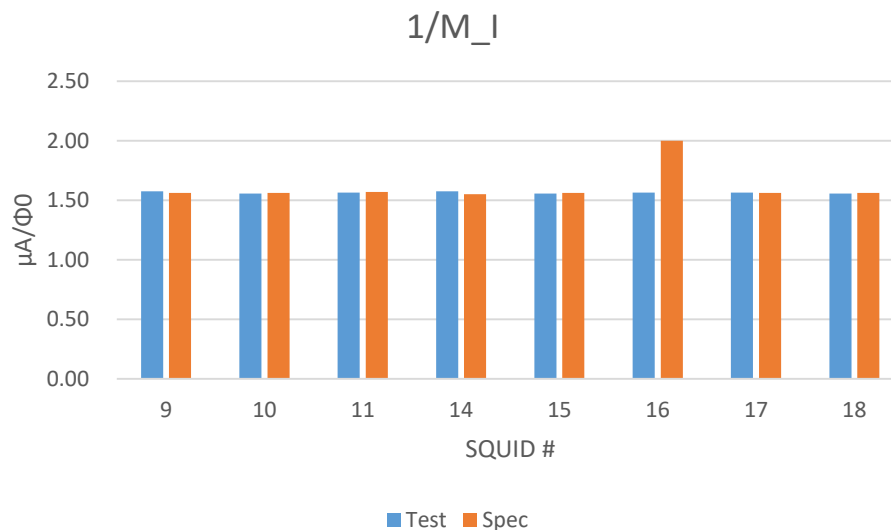
SQUID Test

- The noise is quite larger than the given spec's
 - Seem to be effect of 4K probes
- Similar in resistance, but no difference due to probe



SQUID Test

- The input coupling & the flux feedback coupling error $\sim < 2\%$
- Exception: #16
 - No feedback coupling data
 - Typo?



Dilution Refrigerator

- We received the repaired dilution refrigerator on the last Monday, Sep. 10th (Lab meeting time)
- The future plan for this need to be discussed



Y2L Power failure

- Last Wednesday (Sep. 12th), a power outage occurred.
 - Caused by construction problem of KEPCO(Korean electric power corporation)
 - Took > 1 hr. for recover
- UPS did not work well due to battery deterioration (it was going to be changed in this week)
- Now: He gas filtering & dividing
- Future: 10/1~2, detector will be set on
 - SQUID tuning (by me)

