

# MagLab-OSF Integration Tools



F. F. Balakirev, C. B. Bailey, L. L. Balakireva, LANL

		person	lection 7518-E008-PF	Select						×	
		Experiment ID	Dates	Experiment title		Proposal tit	le		PI		
		P19631-E001-PF	08/02/21-08/07/21	Quantum Oscillations of CePd/	N .		lly frustrated f-electron	intermetallics		onning	
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		P19528-E003-PF	06/29/21-07/03/21	Mapping the Fermi surfaces in	and the second se				and the second second second		
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		P17875-E002-PF	06/25/21-06/26/21	Field and Strain Tuning G	Test Project Files Wiki	Analytics Regi	istrations Contributors Add-on:	s Settings			
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#### High Magnetic Field Science Toolset

Data Acquisition, Annotation, and Presentation Framework

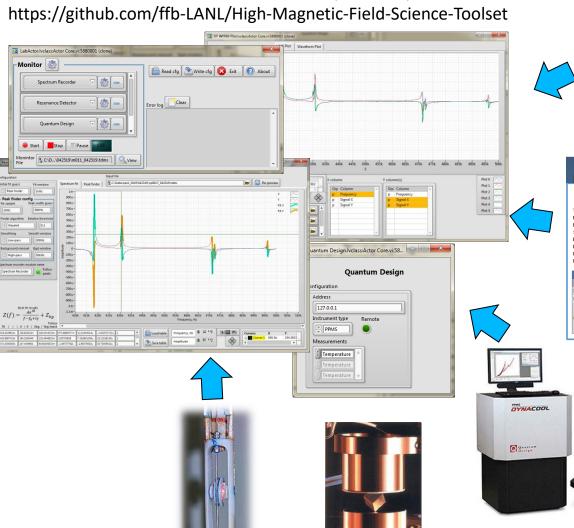
NI LabVIEW Actor Framework (LabActor)

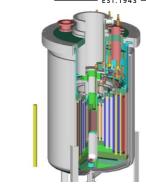
















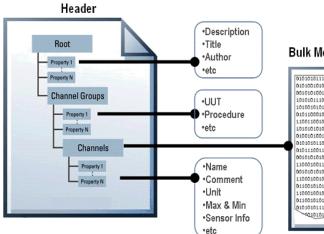


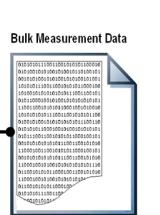
### FAIR-Ready Metadata-Rich Data Formats

Technical Data Management Solution and Hierarchical Data Format 5



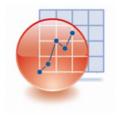
Industry-standard **Interoperable** hierarchical data file formats with embedded rich metadata





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V2 Y1 (Resa	ampled) ampled) Property value	All	4:59:59.9 12/31/ 0 1 2 3 4 5 6 6 7 8 9 10 11 11 12	90 PM 1903	5:00:00.020 12/31/19 100:01221 -0.001221 -0.002441 -0.002441 -0.002441 -0.002441 -0.002441 -0.001221 -0.001221 -0.001221 -0.003662 -0.002441 -0.001221	PM         5:00: 0:03         0:02: 12:           Image: product of the second sec	00,040 PM /31/1903 P 103 0.183971 0.190811 0.202782 0.209622 0.219882 0.230142 0.240403 0.240403 0.247243 0.260923 0.269474 0.278024 0.28284 0.298544	5:00:00.060 PM 12/31/1903 P V2 [04] -0.138511 -0.145380 -0.152248 -0.159117 -0.172855 -0.179723 -0.188309 -0.198612 -0.205481 -0.217502 -0.227805 -0.227805 -0.228031 -0.244977	P Vh [05] -0.042644 -0.039216 -0.040930 -0.042644 -0.047786 -0.051215 -0.051215 -0.051215 -0.05229 -0.05229 -0.052929 -0.05929 -0.05929 -0.05971 -0.059714 -0.063214	5:00:00.090 PM 12/31/1903 PField [06] 9:653819E-7 1:3930764E-6 2:896146E-6 2:896146E-6 9:415532E-6 8:851373E-6 7:263052E-6 8:178590E-6 6:594737E-6 4:501037E-6 2:917184E-6 2:862871E-6	

#### Interoperability













#### Hierarchical Data Formats at MagLab



EST.1943 ------

Prince 10     Prior Proteinance Processes     Prior Processes     Prior Processes     Prior Processes     Proceseses     Proceseses     Processes     Processeseses     Processes		File contents	^	Property name	Property value	
Waveform Plot       Pick P       Red Pitaya 118 al0       Pi       Jacian       Jacian <t< th=""><th>XY WFRM Plot.lvclass:Actor</th><th>Core.vi = p015_101121.tdms</th><th></th><th>Experiment ID</th><th>P17518-E008-PF</th><th></th></t<>	XY WFRM Plot.lvclass:Actor	Core.vi = p015_101121.tdms		Experiment ID	P17518-E008-PF	
Variation       Poix vyp       Poix vyp         12       12       Anisotropic electrical transport in pinning-enhanced Fe-based and HTS supercon name         P TOMS Properties/volass:Actor Core.vi5880001 (clone)       ×         ************************************	_	p		PI	Jens Haenisch	
12       name       p015_10121         1       Configuration Pre-trigger duration = "0.00100000000"       name         1       Configuration Pre-trigger duration = "0.00100000000"       name         1       Configuration Pre-trigger duration = "0.00100000000"       name         1       Configuration Re-targets = "size(s)=1> 1.000000000"       name         1       Configuration Re-targets = "size(s)=1> 1.00000000"       name         1       Configuration Re-target = "size(s)=1> 1.00000000"       name         1       Configuration Re-target = "size(s)=1> 1.000000000"       name         1       Configuration Re-target = "size(s)=1> 1.000000000"       name         1       Configuration Re-target = "size(s)=1> 1.000000000"       name         1       Lockin parameters.DOS       true       name         1       Lockin parameters.Prequency       825/195767       name       name         1       Lockin parameters.Prequency       825/195767       name       name         1 <t< td=""><td>Waveform Plot</td><td>Plot typ Red Pitaya 118 ai0</td><td></td><td>Station</td><td>Cell_2</td><td></td></t<>	Waveform Plot	Plot typ Red Pitaya 118 ai0		Station	Cell_2	
1-       A A A         P TOMS Properties/vclassActor Corev:S800001 (clone)       X         is contents       Configuration Pre-trigger duration = "0.001000000000"         Configuration Pre-trigger duration = "0.001000000000"       Configuration Pre-trigger duration = "0.001000000000"         Configuration Ret = "1250000000"       Configuration Ret = "125000000"         Configuration Ret = "125000000"       Configuration Ret = "1250000000"         Configuration Ret = "125000000"       Configuration Ret = "125000000"         Configuration Ret = "125000000"       Configuration Ret = "125000000"         Configuration Ret = "125000000"       Configuration Ret = "1250000000"         Configuration Ret = "1250000000"       Configuration Ret = "125000000"         Configuration Ret = "125000000"       Configuration Ret = "125000000"         Lockin parameters.Poto Noulus       1510         Lockin parameters.Poto Noulus       1520         Lockin parameters.Phase word       14563         Lockin parameters.Phase word       10         N.Chanellength       240056         N.Chanellength       240056	12-			Title		TS superconducting
ile contents       *       Property name       Property value       *	1-M A M /	M		name	p015_101121	
p015_101121.tdms       Configuration       Configuration Per-trigger duration = "0.001000000000"       Configuration.Per-trigger duration = "0.001000000000"         Configuration.Per-trigger duration = "0.001000000000"       Configuration.Per-trigger duration = "0.00100000000"       Configuration.Per-trigger duration = "0.00100000000"         Configuration.Per-trigger duration = "0.001000000000"       Configuration.Per-trigger duration = "0.00100000000"       Configuration.Per-trigger duration = "0.00100000000"         Configuration.Per-trigger duration = "0.001000000000"       Configuration.Per-trigger duration = "0.00100000000"       Configuration.Per-trigger duration = "0.00100000000"         Configuration.Per-trigger duration = "0.001000000000"       Configuration.Per-trigger duration = "0.00100000000"       Configuration.Per-trigger duration = "0.00100000000"         Configuration.Per-trigger duration = "0.001000000000"       Configuration.Per-trigger duration = "0.00100000000"       Configuration.Per-trigger duration = "0.00100000000"         Configuration.Per-trigger duration = "0.001000000000"       Configuration.Per-trigger duration = "0.00100000000"       Configuration.Per-trigger duration = "0.00100000000"         Lockin parameters.PDDS       true       Lockin parameters.Phase word 1       Lockin parameters.Phase wor	TDMS Properties.lvclass:Actor Core.vi:	5880001 (clone)			×	
P       Configuration Prot-trigger duration = "0.001000000000"       Configuration Prot-trigger duration = "0.00100000000"         Configuration Ret = "12500000.00"       Configuration Ret = "12500000.00"       Configuration Ret = "1250000000"         Configuration Ret = "1250000000"       Configuration Ret = "1250000000"       Configuration Ret = "1250000000"         Configuration Ret = "1250000000"       Configuration Ret = "1250000000"       Configuration Ret = "1250000000"         Configuration Ret = "1250000000"       Configuration Ret = "1250000000"       Configuration Ret = "1250000000"         Configuration Ret = "1250000000"       Configuration Ret = "1250000000"       Configuration Ret = "1250000000"         Configuration Ret = "1250000000"       Configuration Ret = "1250000000"       Configuration Ret = "1250000000"         Lockin parameters.DDS       true       Lockin parameters.Prequency       8267.195767         Lockin parameters.Phase       436.395833       Cockin parameters.Phase word       14563         Lockin parameters.Phase word       14563       Cockin parameters.Phase word       14563         Lockin parameters.Syncronous       true =       Pressenters       Pressenters         NL_ChannelLength       240056       NIL       Pressenters       Pressenters         NL_Sale(0]_Linear_Sope       0.00142       NI_Sale(0]_Linear_Y)pret       0.00142       Pressen		Property name	Property	/ value	^	
Lockin parameters.DDS clock1.250000E+8Lockin parameters.DDS modulus15120Lockin parameters.Frequency word1Lockin parameters.Phase436.395833Lockin parameters.Phase word14563Lockin parameters.Phase word14563Lockin parameters.Phase word15120Lockin parameters.Phase15120Lockin parameters.Phase15120Lockin parameters.Phase15120Lockin parameters.Phase15120Lockin parameters.Phase15120Lockin parameters.SyncronoustrueNI_ArrayColumn0NI_ChannelLength24056NI_OtalType10NI_Scale[0]_Linear_Input_Source4294967295NI_Scale[0]_Linear_Jope0.000142NI_Scale[0]_Linear_Y_Intercept-0.031292NI_Scale[0]_Linear_Y_Intercept-0.031292NI_Scale[0]_Linear_Y_Intercept-0.031292NI_Scale[0]_StatusscaledNI_Scale[0]_StatusscaledNI_Scale[0]_StatusscaledNI_Scale[0]_StatusscaledMi_ncrement8.00000E-9	Ė, p	Configuration	Configu Configu Configu Configu Configu Configu	ration.Pre-trigger duration = " rration.Post-trigger duration = rration.Rate = "12500000.00" rration.Ranges = " <size(s)=1> rration.Re-name channels.<siz rration.Active channels = "0"</siz </size(s)=1>	"0.00100000000" .0000000000" :(s)> = "0"	
Lockin parameters.DDS modulus15120Lockin parameters.Frequency8267.195767Lockin parameters.Frequency word1Lockin parameters.Phase436.395833Lockin parameters.Phase word14563Lockin parameters.Phase word1520Lockin parameters.Phase word1520Lockin parameters.SyncronoustrueNL_ArrayColumn0NL_Channellength240056NL_Channellength240056NL_Channellength240956NL_Scale[0]_Linear_Input_Source429967295NL_Scale[0]_Linear_Slope0.000142NL_Scale[0]_Linear_Y_Intercept-0.031292NL_Scale[0]_Linear_TypeLinearNL_Scale[0]_Linear_Stope0.000142NL_Scale[0]_Linear_Slope0.000142NL_Scale[0]_Linear_Slope0.000142NL_Scale[0]_Linear_Y_Intercept-0.031292NL_Scale[0]_Linear_Y_Intercept-0.031292NL_Scale[0]_Linear_Y_Intercept-0.031292NL_Scale[0]_Linear_Y_Intercept-0.031292NL_Scale[0]_Linear_Y_Intercept-0.031292NL_Scale[0]_Linear_Y_Intercept-0.031292NL_Scale[0]_Linear_Y_Intercept-0.031292NL_Scale[0]_Linear_Y_Intercept-0.031292N_Scale[0]_Linear_Y_Intercept-0.031292N_Scale[0]_Linear_Y_Intercept-0.031292N_Scale[0]_Linear_Y_Intercept-0.031292N_Scale[0]_Linear_Y_Intercept-0.031292N_Scale[0]_Linear_Y_Intercept-0.031292N_Scale[0]_Linear_Y_Intercept-0.031292N_Scale[0]_Line		Lockin parameters.DDS	true			
Lockin parameters.Frequency8267.195767Lockin parameters.Frequency word1Lockin parameters.Phase436.395833Lockin parameters.Phase word14563Lockin parameters.Points per sine wa15120Lockin parameters.SyncronoustrueNL_ArrayColumn0NL_ChannelLength248056NL_ChannelNameRed Pitaya 118 ai0NL_ChannelName1NL_Scale[0]_Linear_Input_Source4294967295NL_Scale[0]_Linear_V_Intercept-0.031292NL_Scale[0]_Scale_TypeLinearNL_Scale[0]_StatusscalednameRed Pitaya 118 ai0wf_increment8.00000E-9		Lockin parameters.DDS clock	1.250000	)E+8		
Lockin parameters.Frequency word1Lockin parameters.Phase436.395833Lockin parameters.Phase word14563Lockin parameters.Points per sine wai15120Lockin parameters.SyncronoustrueNL_ArrayColumn0Ni_ChannelLength248056Ni_ChannelNameRed Pitaya 118 ai0Ni_Scale[0]_Linear_Input_Source4294967295Ni_Scale[0]_Linear_Slope0.000142Ni_Scale[0]_Linear_Slope0.000142Ni_Scale[0]_Linear_Slope0.000142Ni_Scale[0]_Linear_Slope1.0031292Ni_Scale[0]_StatusscalednameRed Pitaya 118 ai0wf_increment8.000000E-9		Lockin parameters.DDS modulus	15120			
Lockin parameters.Phase word 14563 Lockin parameters.Phase word 14563 Lockin parameters.Points per sine was 15120 Lockin parameters.Syncronous true NI_ArrayColumn 0 NI_ChannelName Red Pitaya 118 ai0 NI_ChannelName Red Pitaya 118 ai0 NI_Scale[0]_Linear_Input_Source 4294967295 NI_Scale[0]_Linear_Slope 0.000142 NI_Scale[0]_Linear_Slope 0.000142 NI_Scale[0]_Linear_Y_Intercept -0.031292 NI_Scale[0]_Linear_Y_Intercept -0.031292 NI_Scale[0]_Linear_Y_Intercept -0.031292 NI_Scale[0]_Linear_Status scaled name Red Pitaya 118 ai0 wf_increment 8.00000E-9			8267.195	5767		
Lockin parameters.Phase word14563Lockin parameters.Points per sine wa15120Lockin parameters.SyncronoustrueNI_ArrayColumn0NI_ChannelLength248056NL_ChannelNameRed Pitaya 118 ai0NL_DataType10NI_Scale[0]_Linear_Input_Source4294967295NL_Scale[0]_Linear_Slope0.000142NL_Scale[0]_Linear_Y_Intercept-0.031292NL_Scale[0]_Scale_TypeLinearNL_Scale[0]_StatusscalednameRed Pitaya 118 ai0wf_increment8.00000E-9						
Lockin parameters.Points per sine wa15120Lockin parameters.SyncronoustrueNI_ArrayColumn0NI_ChannelLength248056NI_ChannelNameRed Pitaya 118 ai0NI_DataType10NI_Number_Of_Scales1NI_Scale[0]_Linear_Input_Source4294967295NI_Scale[0]_Linear_V_Intercept-0.031292NI_Scale[0]_Linear_Y_Intercept-0.031292NI_Scale[0]_Scale_TypeLinearNI_Scale[0]_StatusscalednameRed Pitaya 118 ai0wf_increment8.00000E-9			436.3958	333		
Lockin parameters.Syncronous       true         NI_ArrayColumn       0         NI_ChannelLength       248056         NI_ChannelName       Red Pitaya 118 ai0         NI_DataType       10         NI_Number_Of_Scales       1         NI_Scale[0]_Linear_Input_Source       4294967295         NI_Scale[0]_Linear_Slope       0.00142         NI_Scale[0]_Linear_V_Intercept       -0.031292         NI_Scale[0]_Linear_Ty_intercept       -0.031292         NI_Scale[0]_Scale_Type       Linear         NI_Scale[0]_Linear_M       scaled         name       Red Pitaya 118 ai0         wf_increment       8.00000E-9		Lockin parameters.Phase word	14563			
NI_ArrayColumn       0         NI_ChannelLength       248056         NI_ChannelName       Red Pitaya 118 ai0         NI_DataType       10         NI_Number_Of_Scales       1         NI_Scale[0]_Linear_Input_Source       4294967295         NI_Scale[0]_Linear_Slope       0.00142         NI_Scale[0]_Linear_V_Intercept       -0.031292         NI_Scale[0]_Scale_Type       Inear         NI_Scale[0]_Status       scaled         name       Red Pitaya 118 ai0         wf_increment       8.00000E-9		Lockin parameters.Points per sine way	15120			
NI_ChannelLength     248056       NI_ChannelName     Red Pitaya 118 ai0       NI_DataType     10       NI_Number_Of_Scales     1       NI_Scale[0]_Linear_Input_Source     4294967295       NI_Scale[0]_Linear_Slope     0.000142       NI_Scale[0]_Linear_Slope     0.000142       NI_Scale[0]_Linear_V_Intercept     -0.031292       NI_Scale[0]_Scale_Type     Linear       NI_Scale[0]_Scale_Type     Linear       NI_Scale[0]_Scale_Type     Scaled       name     Red Pitaya 118 ai0       wf_increment     8.00000E-9		Lockin parameters.Syncronous	true			
NI_ChannelName       Red Pitaya 118 ai0         NI_DataType       10         NI_Number_Of_Scales       1         NI_Scale[0]_Linear_Input_Source       4294967295         NI_Scale[0]_Linear_Slope       0.000142         NI_Scale[0]_Linear_V_Intercept       -0.031292         NI_Scale[0]_Scale_Type       Linear         NI_Scale[0]_Scale_Type       Linear         NI_Scale[0]_Scale_Type       Scaled         name       Red Pitaya 118 ai0         wf_increment       8.00000E-9		NI_ArrayColumn	0			
NI_DataType       10         NI_Number_Of_Scales       1         NI_Scale[0]_Linear_Input_Source       4294967295         NI_Scale[0]_Linear_Slope       0.000142         NI_Scale[0]_Linear_Y_Intercept       -0.031292         NI_Scale[0]_Scale_Type       Linear         NI_Scale[0]_Status       scaled         name       Red Pitaya 118 ai0         wf_increment       8.00000E-9		NI_ChannelLength	248056			
NI_Number_Of_Scales       1         NI_Scale[0]_Linear_Input_Source       4294967295         NI_Scale[0]_Linear_Slope       0.000142         NI_Scale[0]_Linear_Y_Intercept       -0.031292         NI_Scale[0]_Scale_Type       Linear         NI_Scale[0]_Status       scaled         name       Red Pitaya 118 ai0         wf_increment       8.00000E-9		NI_ChannelName	Red Pita	ya 118 ai0		
NI_Scale[0]_Linear_Input_Source     4294967295     Pitaya 118 ai0       NI_Scale[0]_Linear_Slope     0.000142     3       NI_Scale[0]_Linear_Y_Intercept     -0.031292     4       NI_Scale[0]_Scale_Type     Linear     5       NI_Scaling_Status     scaled     5       name     Red Pitaya 118 ai0     5		NI_DataType	10			
NI_Scale[0]_Linear_Nlpdc_900142       3         NI_Scale[0]_Linear_Y_Intercept       -0.031292         NI_Scale[0]_Scale_Type       Linear         NI_Scale[0]_Status       scaled         name       Red Pitaya 118 ai0         wf_increment       8.00000E-9		NI_Number_Of_Scales	1			
NI_Scale[0]_Linear_Y_Intercept     -0.031292       NI_Scale[0]_Scale_Type     Linear       NI_Scaling_Status     scaled       name     Red Pitaya 118 ai0       wf_increment     8.00000E-9		NI_Scale[0]_Linear_Input_Source	4294967	295	Pitaya 118 ai0	
NI_Scale[0]_Scale_Type     Linear       NI_Scaling_Status     scaled       name     Red Pitaya 118 ai0       wf_increment     8.00000E-9		NI_Scale[0]_Linear_Slope	0.000142	2	3	
NI_Scale[0]_Scale_Type     Linear       NI_Scaling_Status     scaled       name     Red Pitaya 118 ai0       wf_increment     8.00000E-9		NI_Scale[0]_Linear_Y_Intercept	-0.03129	2	4	
NI_Scaling_status     scaled       name     Red Pitaya 118 ai0       wf_increment     8.00000E-9		NI_Scale[0]_Scale_Type	Linear			
wf_increment 8.00000E-9		NI_Scaling_Status	scaled		5	
		name	Red Pita	iya 118 ai0		
wf_start_time 12/31/1903 16:59:59.999		wf_increment	8.000000	)E-9		
		wf_start_time	12/31/19	903 16:59:59.999		

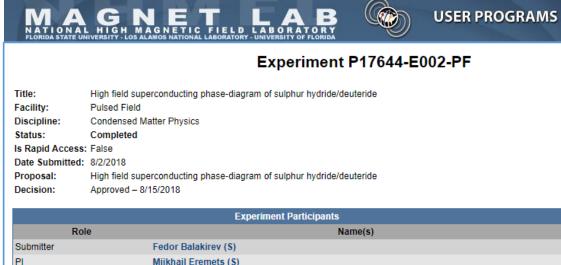
Captured data interspersed with relevant metadata



#### MagLab User Program Metadata



Google Cale	endar - August 2021	× +			•	
$\leftarrow \   \rightarrow \   G$	Calendar.goog	gle.com/calenda	r/u/0/r/month/2	2021/8/1?tab=mc		🛪 ⊸ E
= 🔟	Calendar	Today	< >	August 202	1 - Q (	? (\$} M
SUN	MON 2	TUE 3	WED 4	THU 5	FRI 6	SAT 7
	P19631-E001-PF; P P19544-E001-PF; P			n, Vivien Zapf		
	F 19544-2001-FF, F	. Zinqiang Mao, Su	ipport. Ross McD			
8	9	10	11	12	13	14
	P19540-E002-PF; P P19631-E002-PF; P					
	P19635-E002-PF; P					
15	16	17	18	19	20	21
	P19540-E002-PF; P	: Joseph Checkels	ky; Support: Mun (	Chan		
	P19621-E001-PF; P	: Cui-Zu Chang; Su	pport: Laurel Wint	er		
22	23	24	25	26	27	28
	P19528-E007-PF; P					
	P19634-E001-PF; P					
29	30	31	Sep 1	2	3	4
	P19131-E006-PF; P			Neil Harrison		
	P19528-E007-PF; P	: Lu Li; Support: Jo	hn Singleton			
						( <



PI	Mijkhail Eremets (S)
Collaborator(s)	Luis Balicas (\$) Fedor Balakirev (\$) Laura Greene (\$) Shirin Mozaffari (P) Dan Sun (P)

#### MagLab User Project Portal

MagLab User Program Calendar



### MagLab Project Metadata Hub



1 Google Cale	endar - August 2021	× +			•	- 🗆	×	/cal?2	× +							0	- 0
$\rightarrow$ G		ogle.com/calenda	ar/u/0/r/month	/2021/8/1?tab=mc	۰ (۱	* * ⊸	:	agx.lanl.gov	/cal?2							z	r 🗰 👡
=	Calendar	Today	< >	August 202		0 ¢	Μ		ETIC	С			MagLab Met	tadat	a Hub		
SUN	MON	TUE	WED	THU	FRI	SAT		BOR	POTAS	γs							
		<b>3</b> PI: Filip Ronning; Su PI: Zhiqiang Mao; Su			6	7			Name	Search							
	F19544-E001-FF, 1	ri. Zhiqiang Mao, Su	upport. Koss McD					Proposal ID	Experiment ID	PI	Date Start		Experiment Title	Station	<u>Support</u>	ID	Link E
8	9	10	11	12	13	14		P19528	P19528- E003-PF	Lu Li	2021- 07-06		Mapping the Fermi surfaces in Kondo insulator YbIr3Si7	Cell_294	John Singleton	40220	GotoFSUe
	P19540-E002-PF; F	PI: Joseph Checkels PI: Filip Ronning; Su	sky; Support: Mun	n Chan				P19528	P19528- E007-PF	Lu Li	2021- 08-30	shot 25 mS	tuning fork magnetometry of Kondo insulator YbB12 in 65 T pulsed magnetic fields	Cell_1	John Singleton	40619	GotoFSU e
	P19635-E001-PF; F	PI: James Wampler;	Support: Vivien 2	Zapf, Minseong Lee				P19528	P19528- E008-PF	Lu Li	2021- 10-18		tuning fork magnetometry of Kondo insulator YbB12 in 65 T pulsed magnetic fields	Cell_1	John Singleton	40927	GotoFSU e
15	16	17	18	19	20	21			P19528- E009-PF	Lu Li	2021-		Mapping the Fermi surfaces in Kondo insulator YbIr3Si7	Cell 294	John Singleton	40928	GotoFSUe
		PI: Joseph Checkels										65 T Multi					
	P19621-E001-PF; F	PI: Cui-Zu Chang; Su	upport: Laurel Wir	nter				P19528	P19528- E010-PF	Lu Li	2021- 10-25	shot 25 mS (Short Pulse)	Mapping the Fermi surfaces in Kondo insulator YbIr3Si7	Cell_1	John Singleton	40929	GotoFSU e
22	23	24	25	26	27	28		P19533	P19533- E002-PF	Matthew Coak	2022- 01-17	65 T Multi shot 25 mS (Short Pulse)	Fermiology of 2D magnetic vdW metal Fe3GeTe2	Cell_1	John Singleton	40950	GotoFSU e
		PI: Lu Li; Support: Jo PI: James Wampler;		Zapf, Minseong Lee				P17906	P17906- E008-PF	Minhyea Lee	2021- 12-06	65 T Multi shot 25 mS (Short Pulse)	Investigation on unusual magnetic responses in quantum magnets	Cell_4	Mun Chan	40622	GotoFSU e
								P19534	P19534- E001-PF	Mun Chan	2021- 09-06	65 T Multi	Pulsed magnetic field study of infinite layer cuprates.	Cell_3	Mun Chan, Boris Maiorov	40236	GotoFSUe
29	30	31	Sep 1	2	3	4		DIOSOL	P19534-		2022-	65 T Multi	Development of Resonant Ultrasound	0.11.0	Mun Chan,		
		PI: Neil Harrison; Su PI: Lu Li; Support: Jo		, Nell Harrison				P19534	E002-PF	Mun Chan	01-24		Spectroscopy for Pulsed Magnetic Field Magnets	Cell_3	Boris Maiorov	41025	GotoFSUe
	1 19520-E007-FF, I	п. са с, заррон. эс	onn ongieton				<	P19131	P19131- F003-PF	Neil Harrison	2021-	65 T Multi	Nature of the field driven insulator to	Cell_2	Mun Chan, Satya	37811	GotoFSUe

MagLab User Program Calendar

#### Apache Wicket frontend, Jersey (jax-rs ) for rest API, SQLite database



### MagLab Project Metadata Hub Integration



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		P19528	P19528- E003-PF	Lu Li	07-06 sh	ot (Duplex)	Mapping the Fermi surfaces in Kondo insulator YbIr3Si7	Cell_294	John Singleto,	40220 Goto	FSU edit
		P19528	P19528- E007-PF	Lu Li	2021- 08-20 sh	ot 25 mS	uning fork magnetomet <del>ry of Kondo</del> insulator YbB12 in 65 T pulsed magnetic fields	Cell_1	John Singleton	40619 Goto	FSUedit
Pulse R C:\Dat\101121\p017_101121.tdms		P19528	P19528- E008-PF	Lu Li	2021- 10.18 sh	not 25 mS	tuning fork magnetometry of Kondo insulator YbB12 in 65 T pulsed magnetic fields	Cell_1	John Singleton	40927 Goto	FSU edit
Monitor	Read cfg	P19528	P19528- E009-PF	Lu Li	11-01 sh	not (Duplex)	Mapping the Fermi surfaces in Kondo insulator YbIr3Si7	Cell_294	John Singleton	40928 Goto	FSU edit
RP Lockin 118 🕞 🎒 📥	Broject title Log Record	P19528	P19528- E010-PF	Lu Li	2021- 10-25 sh (S	Short Pulse)	Mapping the Fermi surfaces in Kondo insulator YbIr3Si7	Cell_1	John Singleton	40929 Goto	FSU edit
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	Experiment title Mapping the Fermi surfaces in Kondo insulator Yblr3Si7	P17906	P17906- E008-PF	Minhyea Lee	2021- 12.06 sh		Investigation on unusual magnetic responses in quantum magnets	Cell_4	Mun Chan	40622 Goto	FSU edit
Select Item	Experiment Change Principal Investigator P19528-E010-PF Lu Li	P19534	P19534- E001-PF	Mun Chan	2021- 00.06 sh		Pulsed magnetic field study of infinite layer cuprates.		Mun Chan, Boris Maiorov	40236 Goto	FSU edit
Start Stop Pause OFF	OSF user Sync to OSF Fedor Balakirev	P19534	P19534- E002-PF	Mun Chan	2022- 01.24 sh	not 25 mS	Development of Resonant Ultrasound Spectroscopy for Pulsed Magnetic Field Magnets		Mun Chan, Boris Maiorov	41025 Goto	FSU edit
Monintor B View		P19131	P19131- E003-PE	Neil Harrison			Nature of the field driven insulator to metal transition in the Kondo insulator		Mun Chan, Satya	37811 Goto	FSU edit

MagLab Research Software Framework (LabActor)

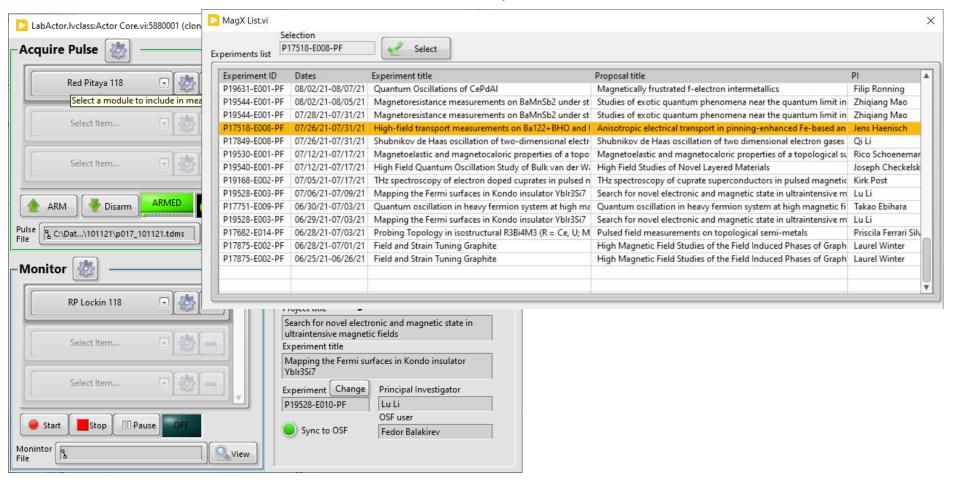
Apache Wicket frontend, Jersey (jax-rs) for rest API, SQLite database



#### MagLab Project Metadata Hub Integration



#### Experiment selection tool

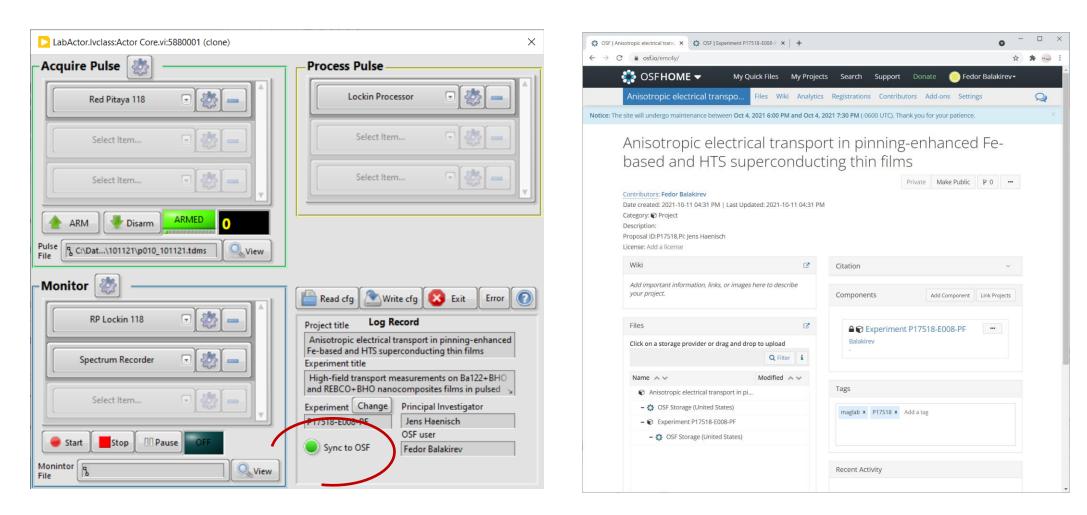


MagLab Research Software Framework (LabActor)



#### MagLab Project Metadata OSF Syncronization





Pre-populated private OSF project workspace

MagLab Research Software Framework (LabActor)



#### Hierarchical Data Formats and OSF



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Monintor R View		p022_10112	

MagLab Research Software Framework (LabActor)

Captured data upload to linked OSF project But what's inside? Is it searchable?



## Hierarchical Data Formats and OSF Metadata listing



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Select Item	Select Item	Q Filter     ^       © Experiment P17518-E008-PF       - OSF Storage (United States)	name = p022_101121 Experiment ID = P17518-E008-PF Title = Anisotropic electrical transport in pinning-enhanced Fe-based and HTS superconducting thin films
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			<ul> <li>Configuration = [Configuration]</li> <li>Configuration.Pre-trigger duration = "0.001000000000"</li> </ul>
	Anisotropic electrical transport in pinning-enhanced Fe-based and HTS superconducting thin films		Configuration.Post-trigger duration = "0.001000000000"
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×	P17518-E008-PF Jens Haenisch		<ul> <li>NI_Number_Of_Scales = 1</li> </ul>
Start Stop Pause OFF	OSF user		<ul> <li>NI_Scale[0]_Scale_Type = Linear</li> </ul>
	Sync to OSF Fedor Balakirev		<ul><li>NI_Scale[0]_Linear_Slope = 142.235106E-6</li></ul>
Monintor			<ul> <li>NI_Scale[0]_Linear_Y_Intercept = -31.291723E-3</li> </ul>
			<ul> <li>NI_Scale[0]_Linear_Input_Source = 4294967295</li> </ul>
			<ul> <li>Lockin parameters.Frequency = 8.267196E+3</li> </ul>

MagLab Research Software Framework (LabActor)

Accompanying metadata listing

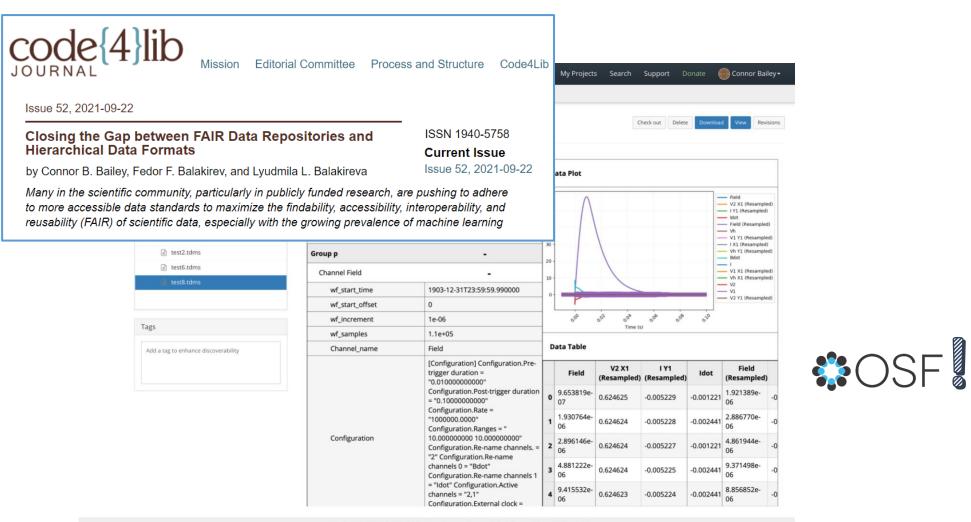
 Lockin parameters.Syncronous = T Lockin parameters.Points per sine wave = 15120

Lockin parameters.Phase = 196.633929E+0



## Hierarchical Data Formats and OSF TDMS/HDF5 File Renderer





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https://journal.code4lib.org/articles/16223



### MagLab OFS Log Book Helper



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MagLab Research Software Framework (LabActor)

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# MagLab-OSF Integration Tools



The tools for users to create OSF projects linked to their MAGLAB project on the User Portal and the official magnet time calendar.

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	P17518-E008-PF Jens Haenisch
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Monintor	

Pre-populate the OSF project description and wiki with the project metadata.

Data recorded during the user experiment can be uploaded to the corresponding OSF project in FAIRready formats.

Use OSF to preview the file content and metadata

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