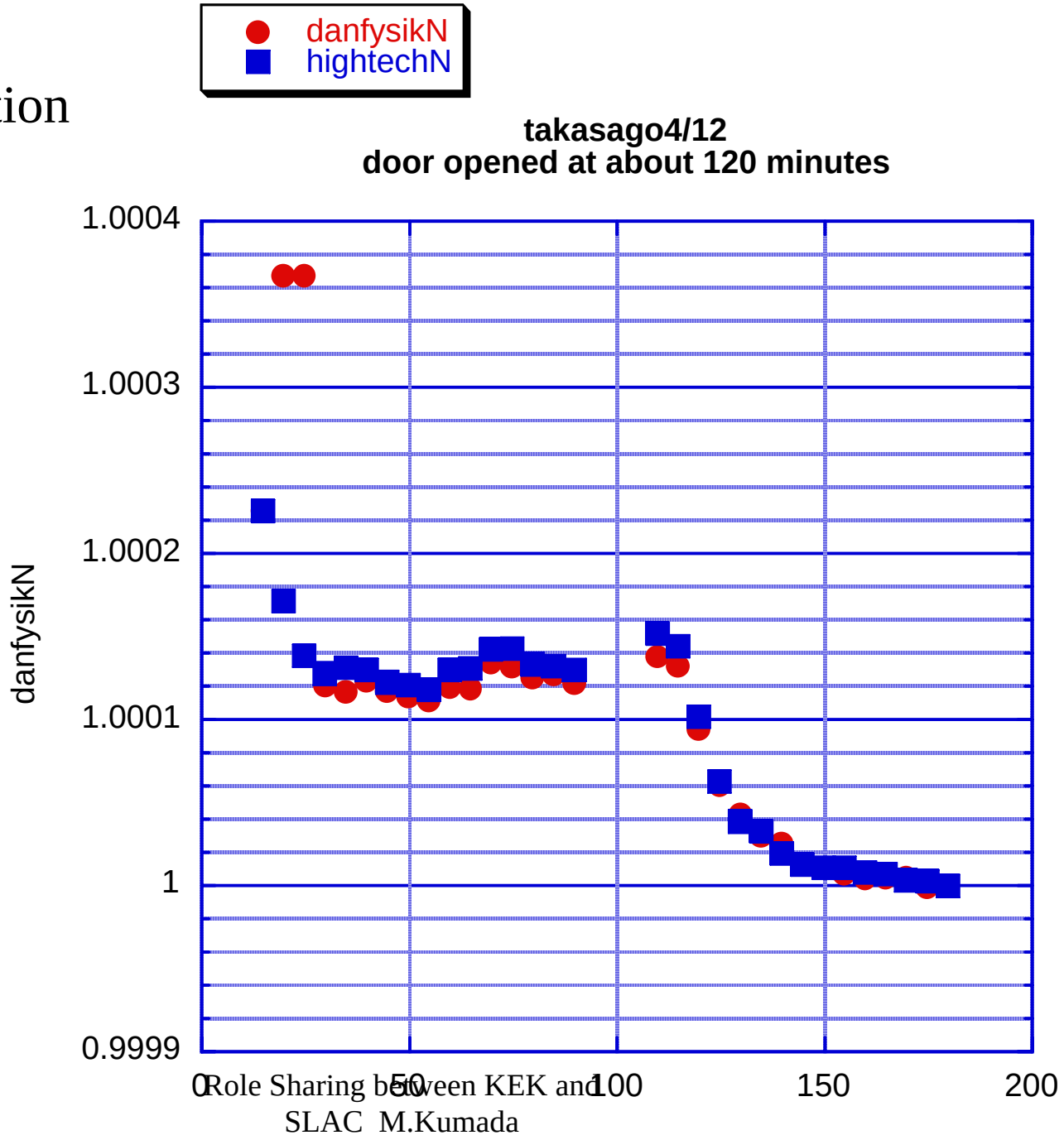
Role Sharing between KEK and SLAC

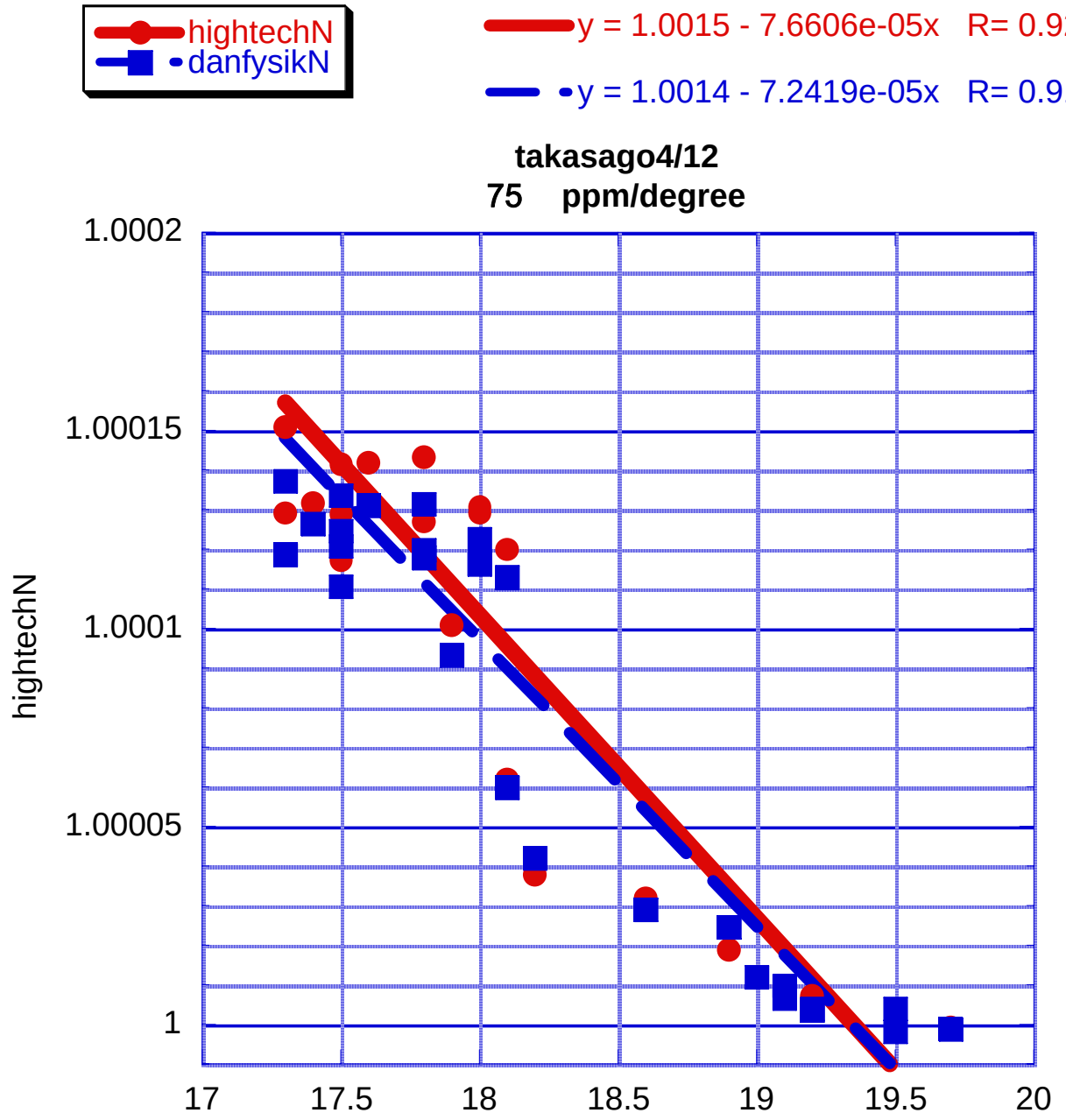
1. Performance of Demonstration power supply of KEK
2. Role sharing
3. R&D at NIRS

1. Demonstration Power supply

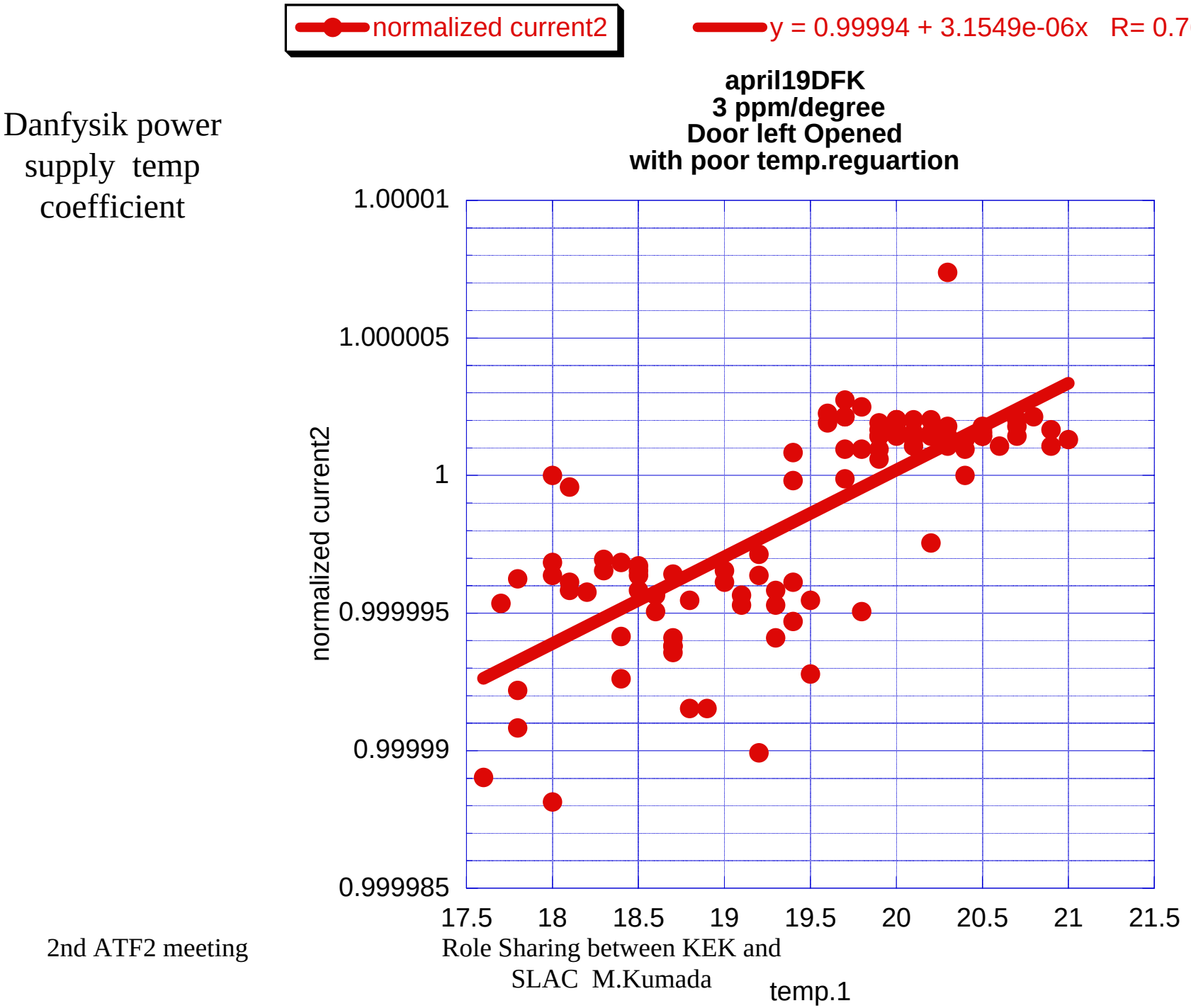
takasago power supply current vs time



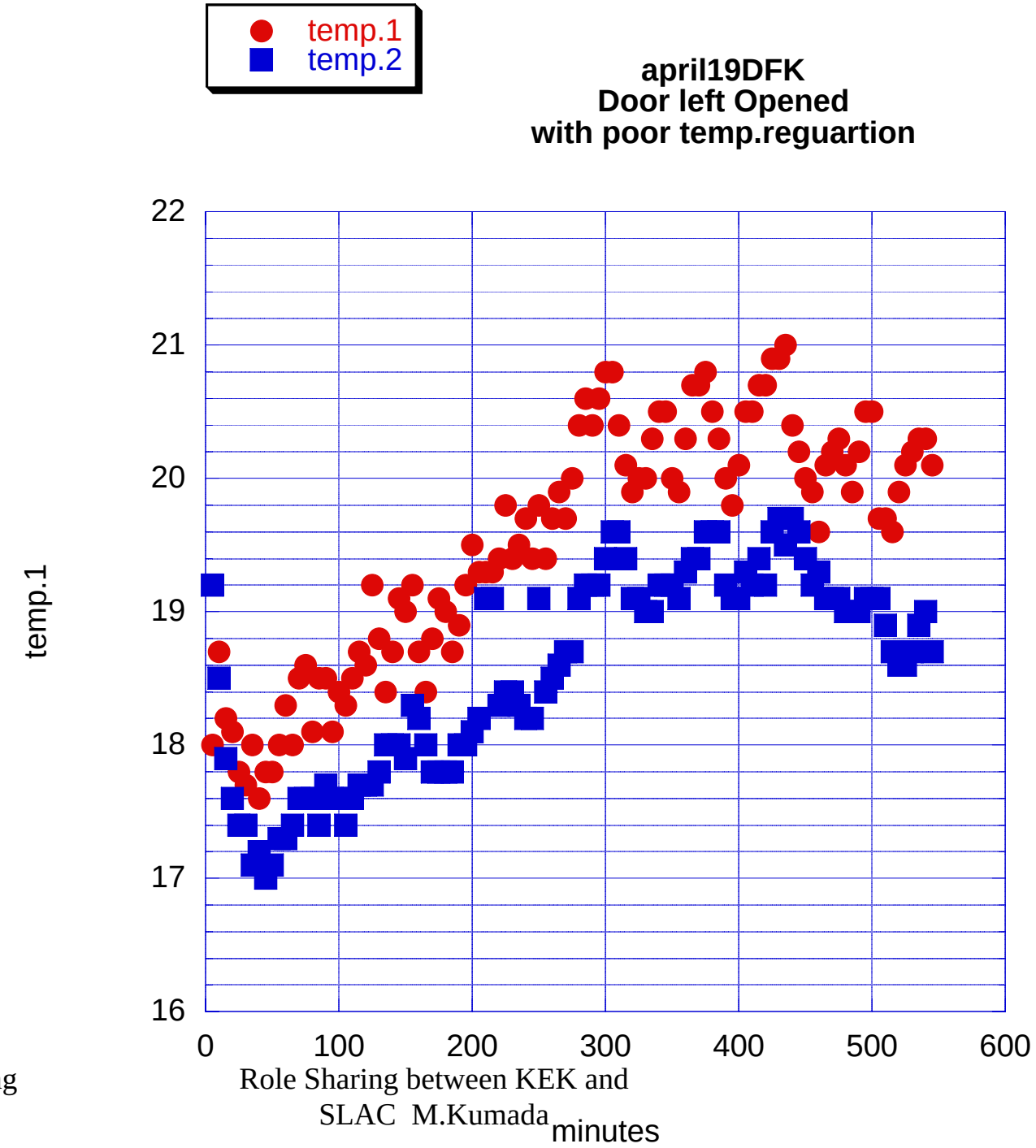
takasago power supply temp coefficient



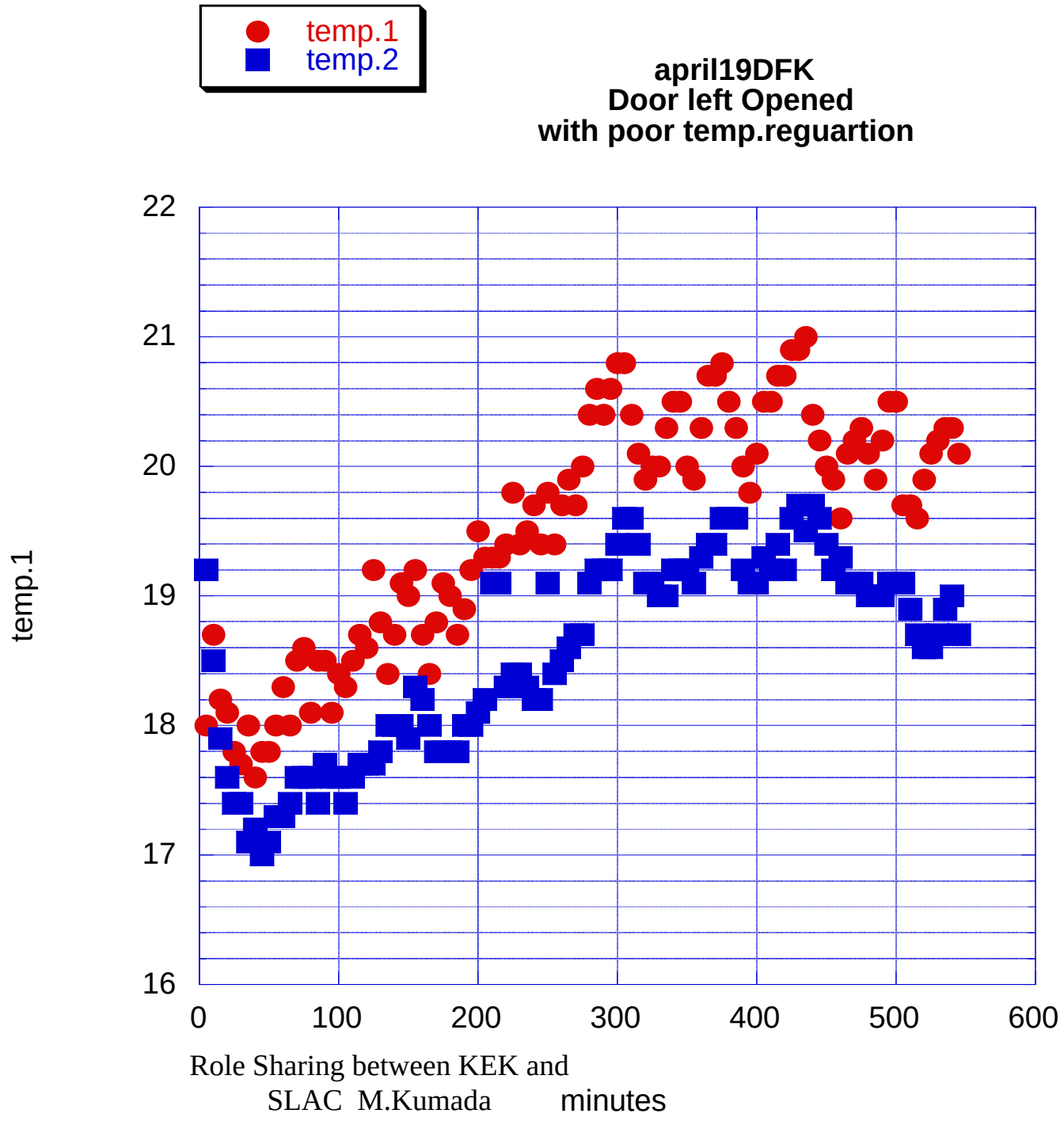
Danfysik power supply temp coefficient



monitored temp coefficient



Current vs temperature



2. Role sharing

			Responsibility	Schedule	person in charge
Phase -2	Power supply system				
		controllers	SLAC		
		bulk PS's	SLAC		
		modules	SLAC		
		cables from controller to modiles	SLAC		
		controller software	SLAC		
		system software	KEK		Terunuma
		racks	SLAC		
		cooling fan if module has no fan	SLAC		
		performance test	SLAC/KEK		PB/Terunuma/MK
		test equipments; oscilloscope..	KEK		MK
		approval of Spec.	KEK/SLAC		PV/Terunuma/MK
	Power cables				
		Input AC cables	KEK		Terunuma/MK
		cables from modules to magnets	KEK		Terunuma/MK
	Control cables				
		ethernet cables to controllers	KEK		Terunuma
		interlock cables from magnets to co	KEK		Terunuma
	Area				Urakawa
		cable trays	KEK		Urakawa
		air conditioning (cooling)	KEK		Urakawa
		AC distribution box	KEK		Terunuma

2. Role sharing

		trigger, control, ethernet signals	KEK	Terunuma
	Transportation			
		from SLAC to Narita	SLAC	Terunuma
		from Natita to KEK	KEK	Terunuma
Phase -3	Installation			
		training	SLAC	PB
		cabling (power and control)	SLAC	
		checkout the system	SLAC/KEK	PB/Terunuma/MK
	Commisioning		SLAC/KEK	PB/Terunuma/MK
	Maintenance		SLAC	
	Operation		SLAC/KEK	PB/Terunuma/MK

3. A Personal Wish list of R&D at NIRS

1. NMR controled B and Q power supply

2. Application of high performance to PIXE microbeam
- the scanning microbeam PIXE analysis facility at NIRS
- Study of possible Upgrade of Oxford Microbeams OM2000
- Target- Resolution better than sub micron

3. Study of high RAS /HA
power supply in particle Cancer therapy application

3.Question and answer list

1. What is the ambient temperature of the facility where the power supplies will operate?	Terunuma: I assume it will be 20 degrees. It is not discussed but it may be in the range from 20 to 25 degrees. Accelerator room is 25 degrees.
2. Is there air conditioning available for the racks and power supplies?	Yes
3. What is the interface (if any) for the remote operation and monitoring of the bulk power supply?	Terunuma: I think SLAC will use the EPICS interface with Ethernet. Kumada: Bulk power supply and Power module should be controlled seamlessly. Otherwise, it is difficult to say that the system is HA.
4. What is the personnel protection interface (if any)	Terunuma: No idea.
5. What is the magnet protection interface (thermal switch to Ethernet controller?	Terunuma: For ATF, we use a thermal switch and water flow switch. They are connected the external interlock for power supplies. ATF2 magnet is same as ATF's.

3.Question and answer list

6.Are there any corrector magnets?	no
7.Are the corrector magnets wound on the same core as the main quad and dipole windings? Mutual coupling concerns	Yes for Quadrupole
8. Two transductor or one transductor power system?	yes
9. Does KEK want to monitor ground current and trip off power supplies on excessive ground current?	YES. I will not be surprised there are high frequency common mode component. I certainly support this idea.
10. If one transductor use 100 ohm resistor to ground. If two transductors, then monitor ground current differentially. In both cases the ground current is sent to the Ethernet Controller.	yes

3.Question and answer list

11. When does KEK want the SLAC demonstration system?	We will discuss. What would you like to study with it?
12. Should the demonstration system include the rack?	We will discuss. (yes). Purchase in Japan.
13. What is the shipping address for the demonstration system?	We will discuss. (no)
14. How will KEK control the Bulk Power supplies?	It is not KEK. SLAC will make it.
15. Is there a layout that shows the locations of the magnets and the power supply racks?	Terunuma: The exact location is not decided. It is along the beam line and behind shields as I showed today. I will send a CAD file of ATF area with DXF format. We will discuss on this topic

3.Question and answer list

16.Who will approve the power supply specifcations?	KEK meeting with Kumada