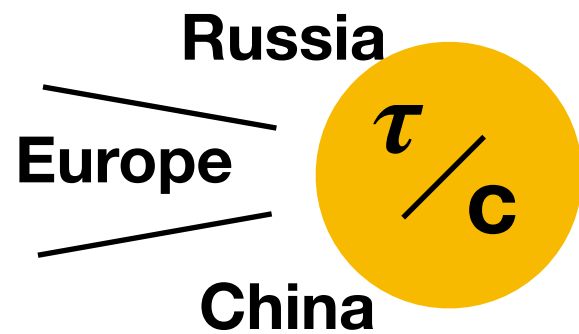




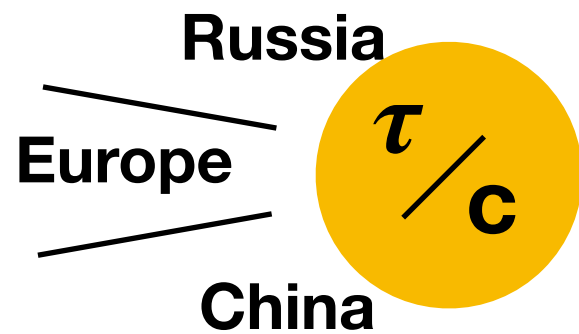
LEP	Large Electron Positron Collider 1989-2000			
L = Luminosity	SM Precision Results			
E = Energy	< 209 GeV (Higgs=125 GeV)			
P = Polarization	just for energy calibration			
Background + Radiation	low			



Joint International Workshop
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November 16-18, 2020

LEP	Large Electron Positron Collider 1989-2000	HERMES@DESY 1995-2007		
L = Luminosity	SM Precision Results	low		
E = Energy	< 209 GeV (Higgs=125 GeV)	low		
P = Polarization	just for energy calibration	good!	Beam polarization (Novosibirsk) Single Spin Asymmetries, Transversity, Sivers, Collins, quark spin distributions	
Background + Radiation	low	low		

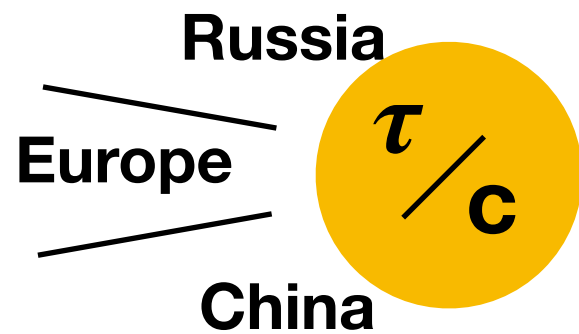
EIC next?



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LEP	Large Electron Positron Collider 1989-2000	HERMES@DESY 1995-2007	PANDA@FAIR	
L = Luminosity	SM Precision Results	low	too low for CP- and Flavor- Violation	
E = Energy	< 209 GeV (Higgs=125 GeV)	low	ok	
P = Polarization	just for energy calibration	good!	no :-)	
Background + Radiation	low	low	high	

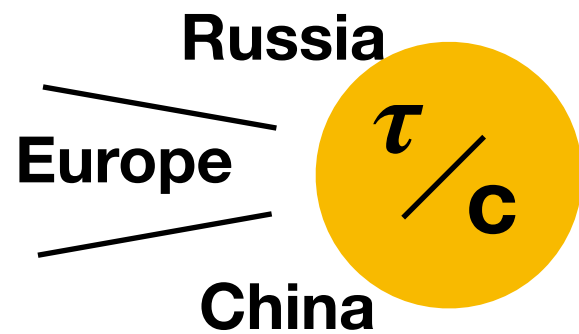
**time for funding
>> human scale?**



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LEP	Large Electron Positron Collider 1989-2000	HERMES@DESY 1995-2007	PANDA@FAIR	Super $\frac{\tau}{c}$ Factory
L = Luminosity	SM Precision Results	low	too low for CP- and Flavor- Violation	++
E = Energy	< 209 GeV (Higgs=125 GeV)	low	ok	++
P = Polarization	just for energy calibration	good!	no :-)	++ Important!
Background + Radiation	low	low	high	low!

**time for funding
>> human scale?**



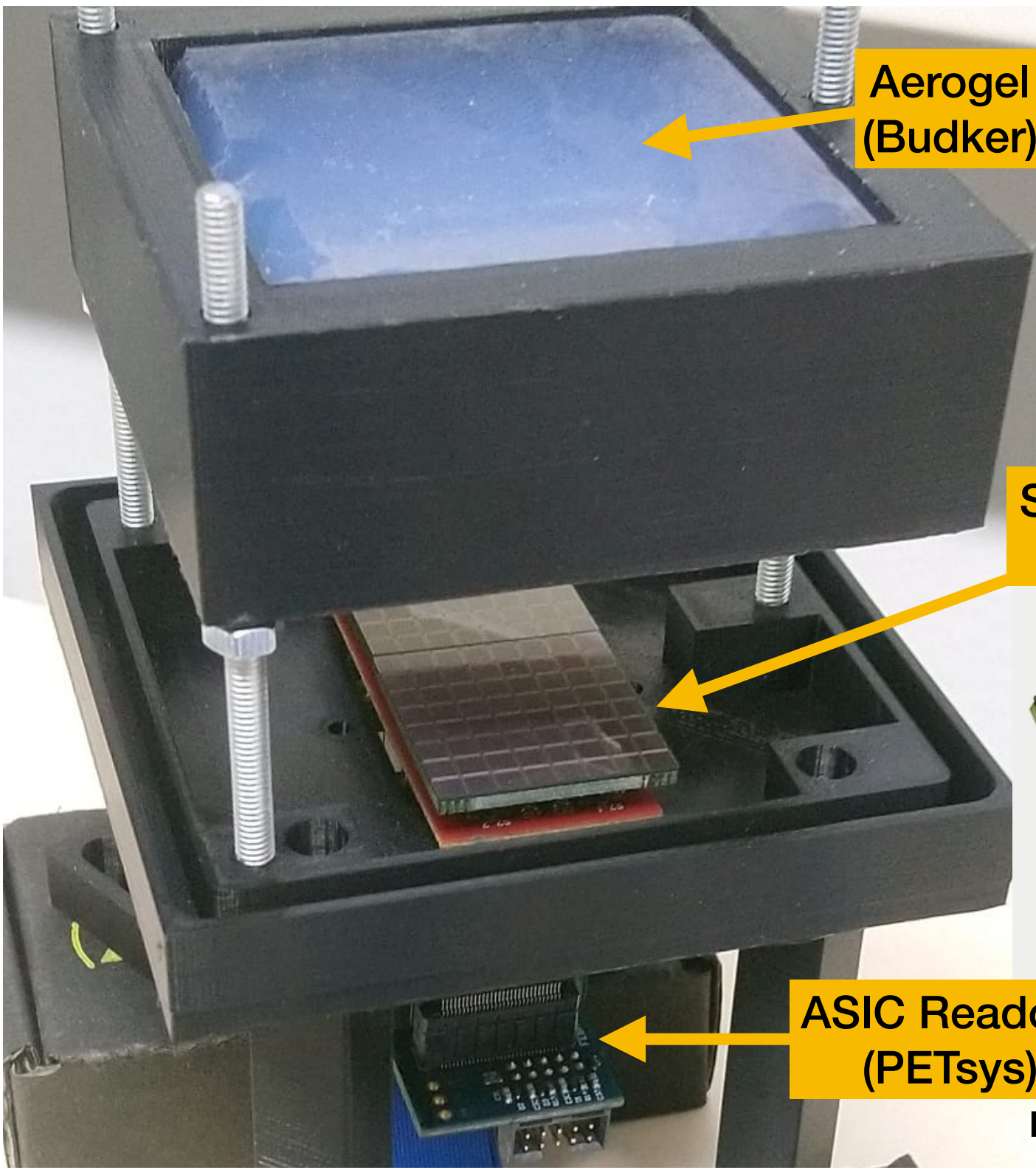
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Particle Identification

Final Design of PID ($\pi/\mu/K$) still open;
Very different approaches in SCT/STC;
RICH vs. DIRC

Careful comparison needed!

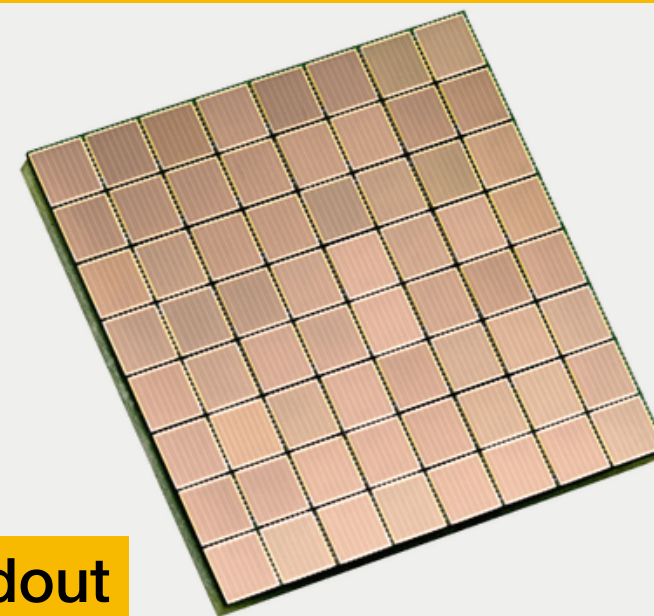
Relatively low background and
radiation levels allow for use of
SiPMs in Cherenkov radiators



Aerogel
(Budker)

SiPM 2x64 pixel sensors
(KETEK)

ASIC Readout
(PETsys)



Michael Düren, Univ. Giessen