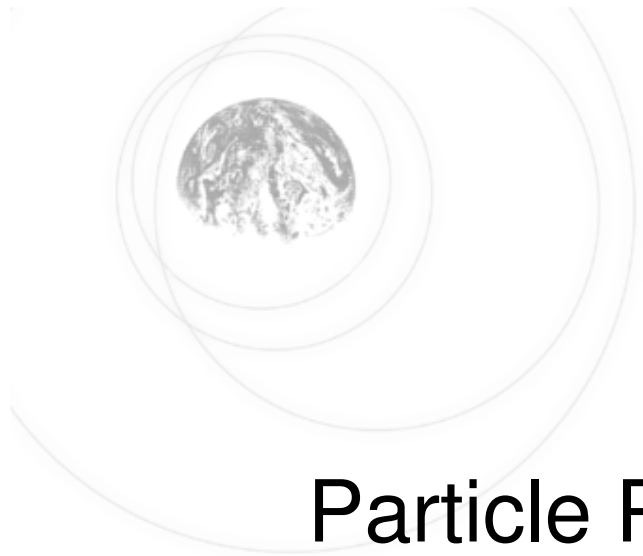




HORIBA

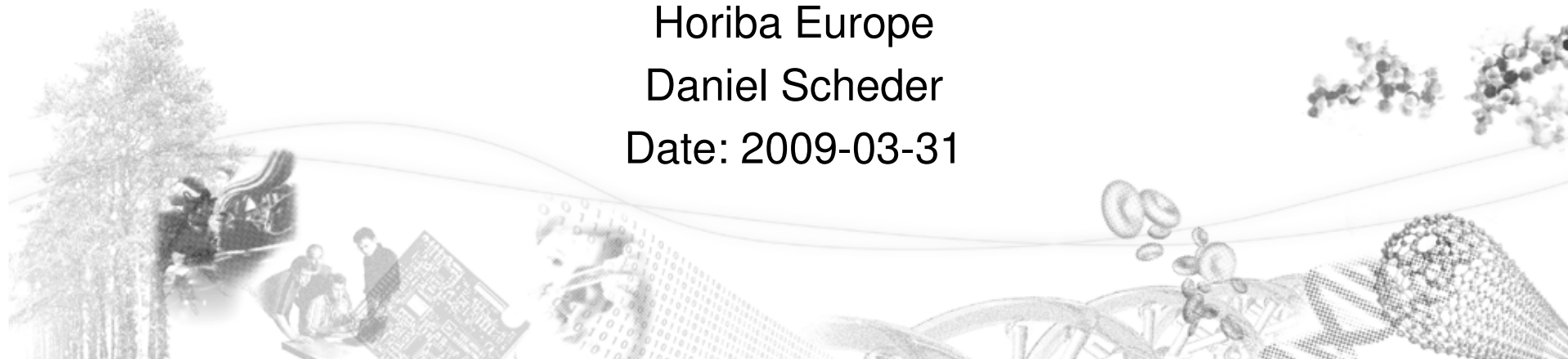
Explore the future





Particle Penetration of PN counting Devices

Horiba Europe
Daniel Scheder
Date: 2009-03-31

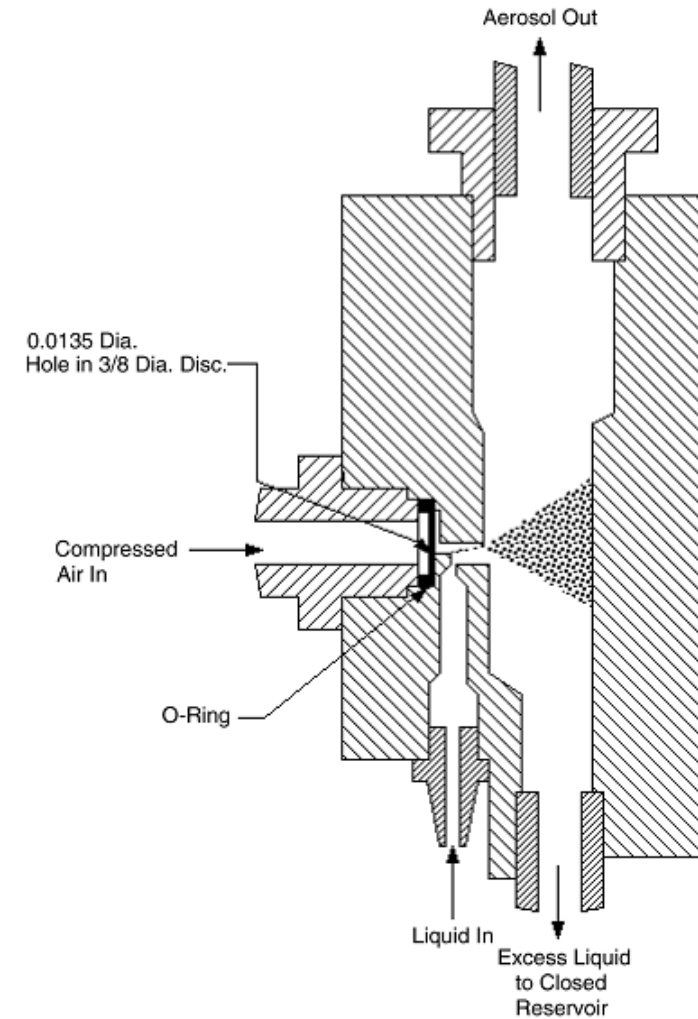
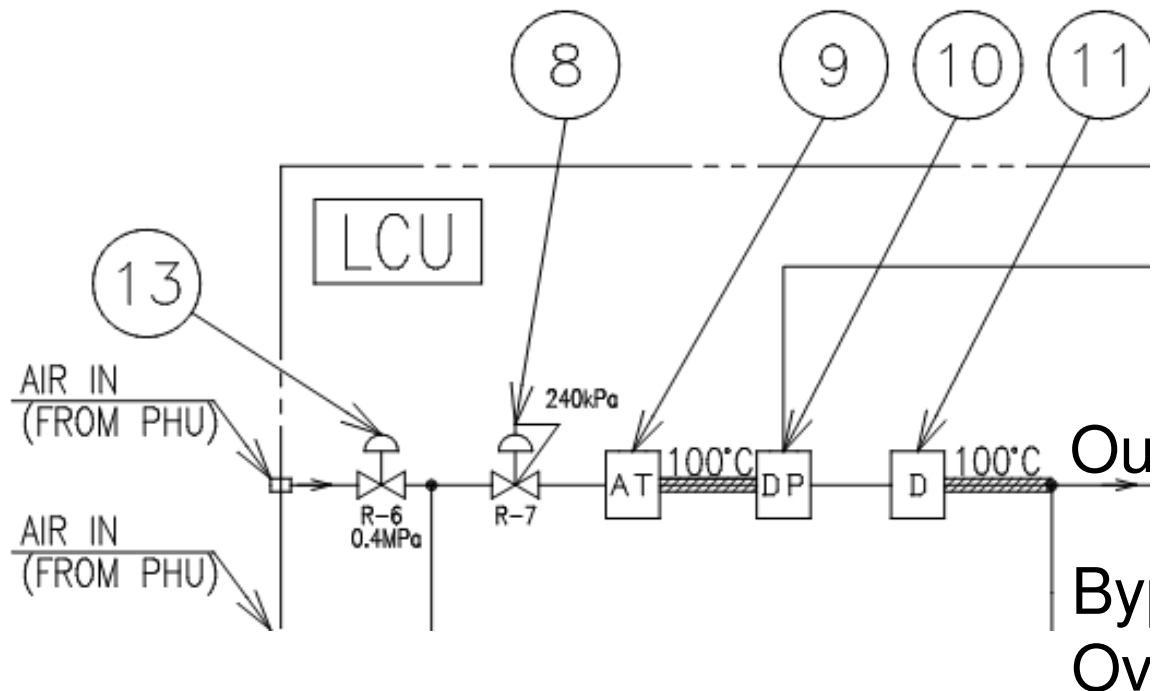


Content

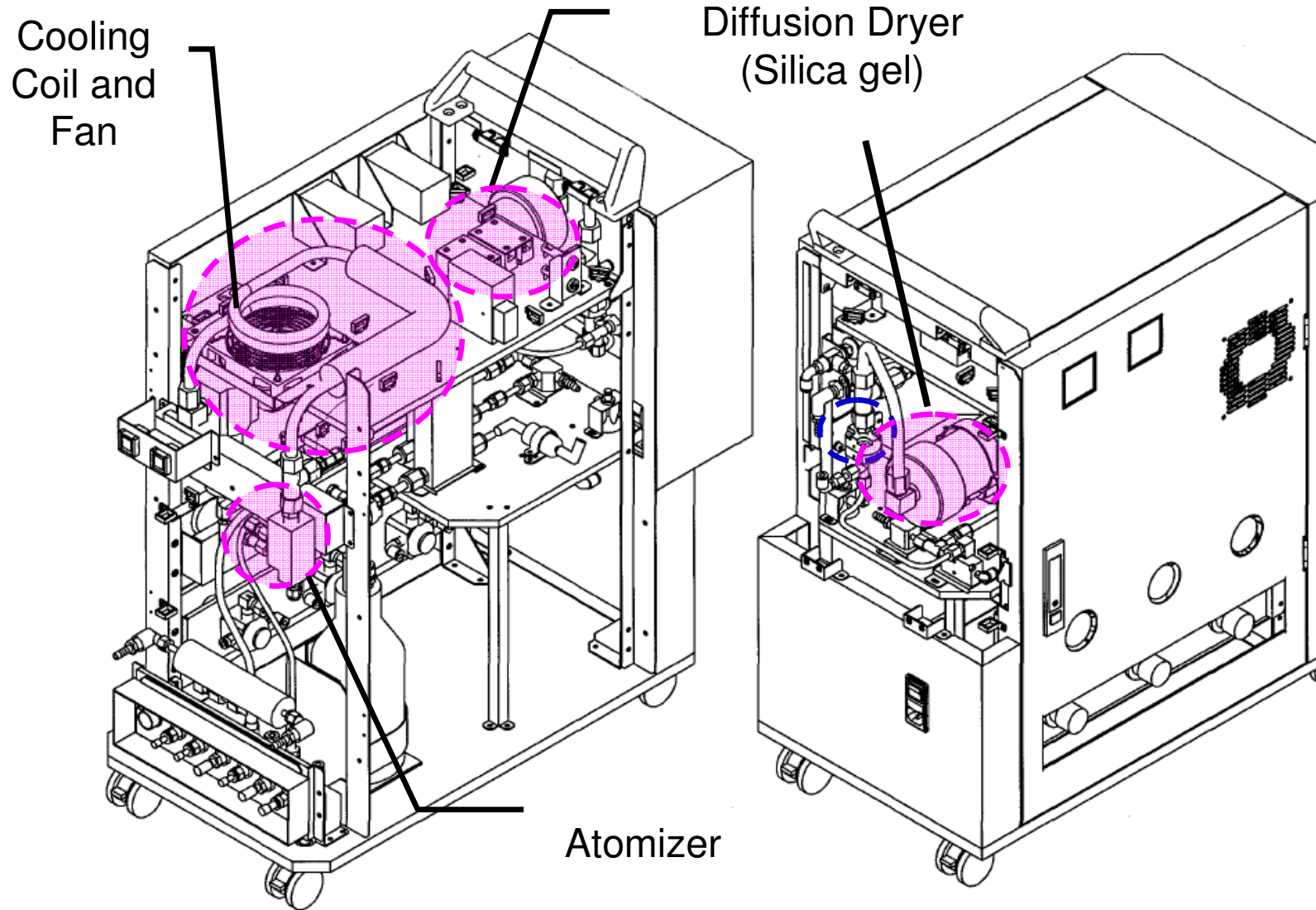
- Particle Generator
- PCRF Calibration Setup
- Results
- Conclusion

Particle Generator (LCU) I

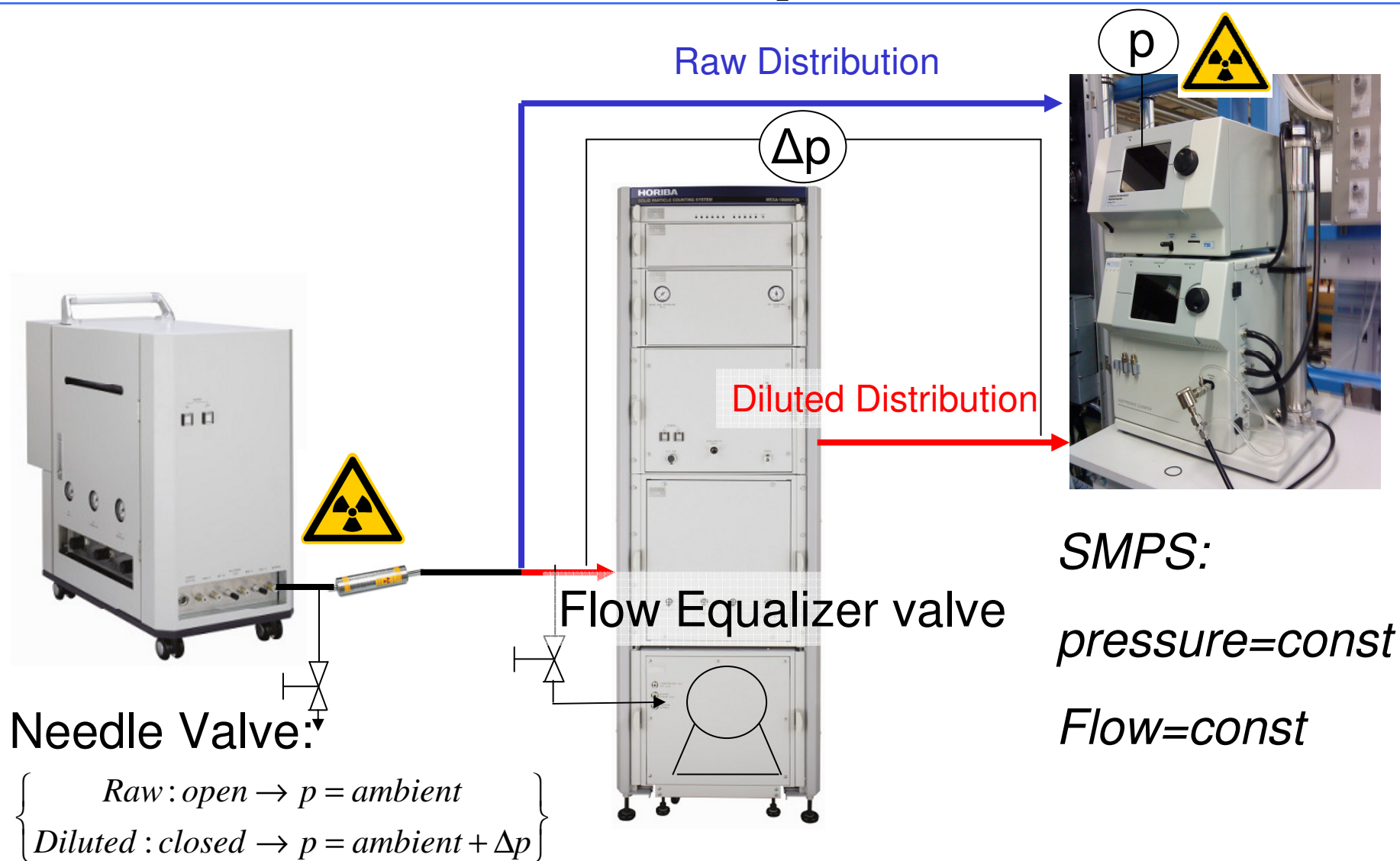
- 8: Pressure Regulator
- 9: Atomizer TSI 3076
- 10: Cooling Coil and Drainpot
- 11: Diffusion Dryer



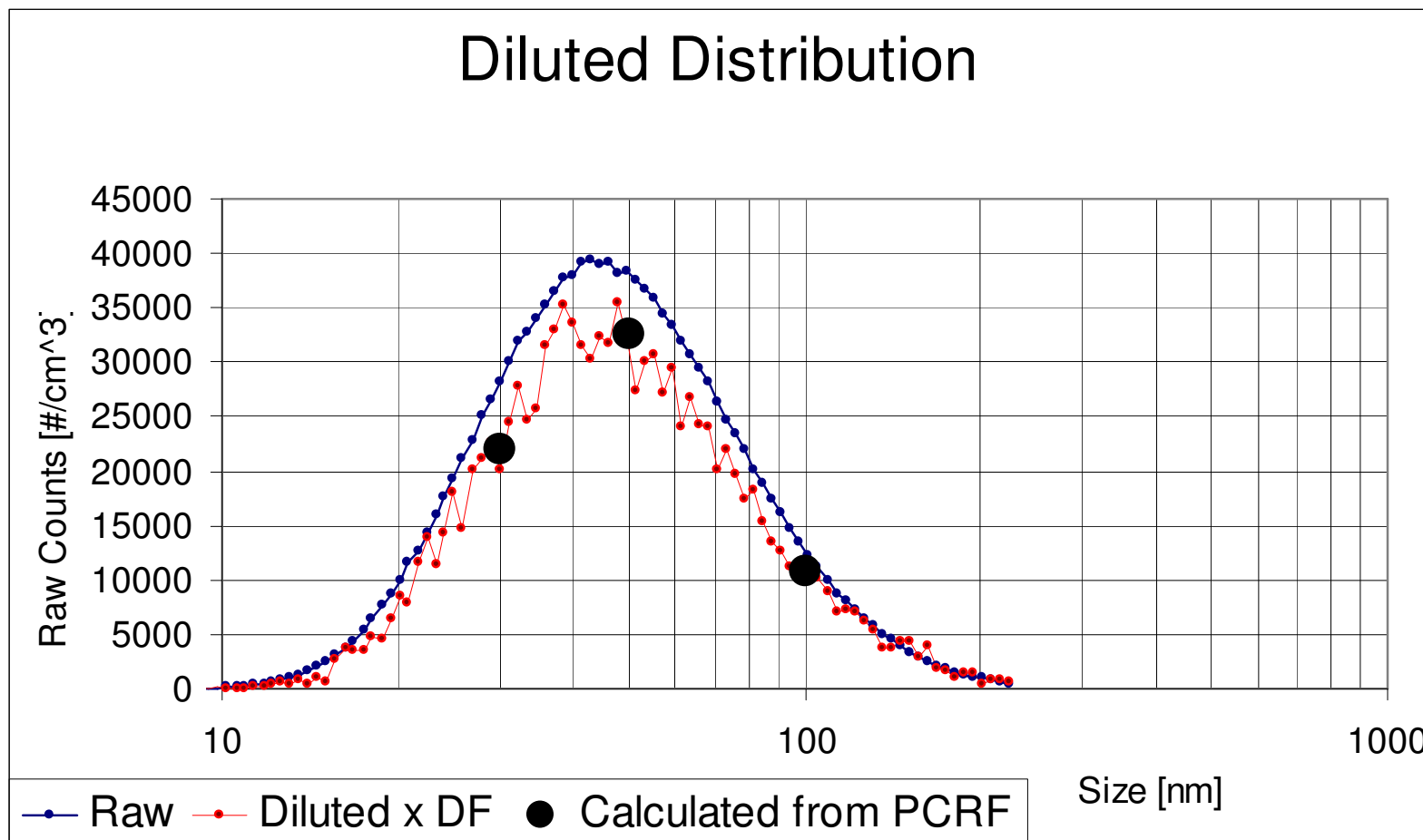
Particle Generator (LCU) II



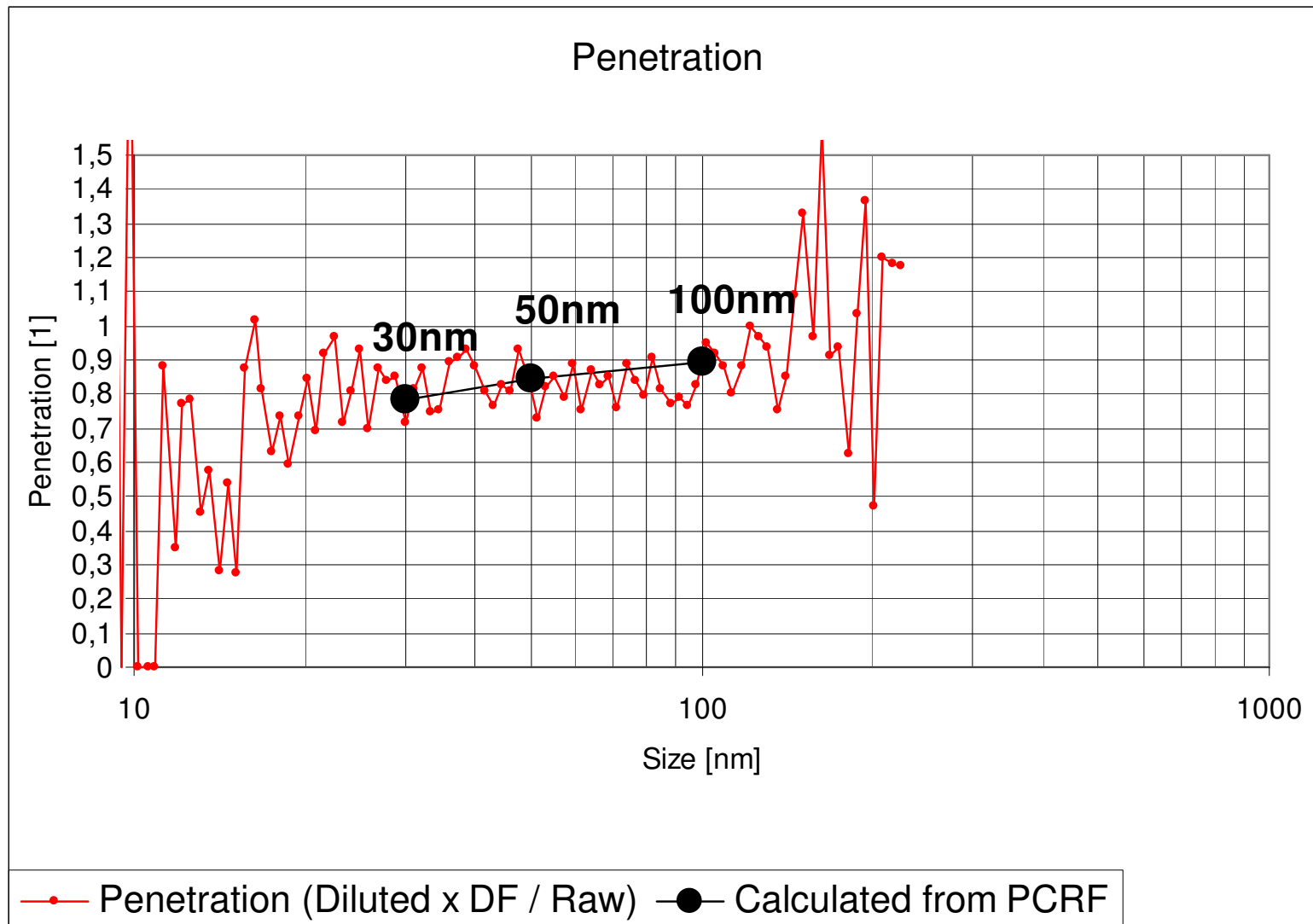
Setup



Size Distribution, DF10x15



Penetration, DF10x15



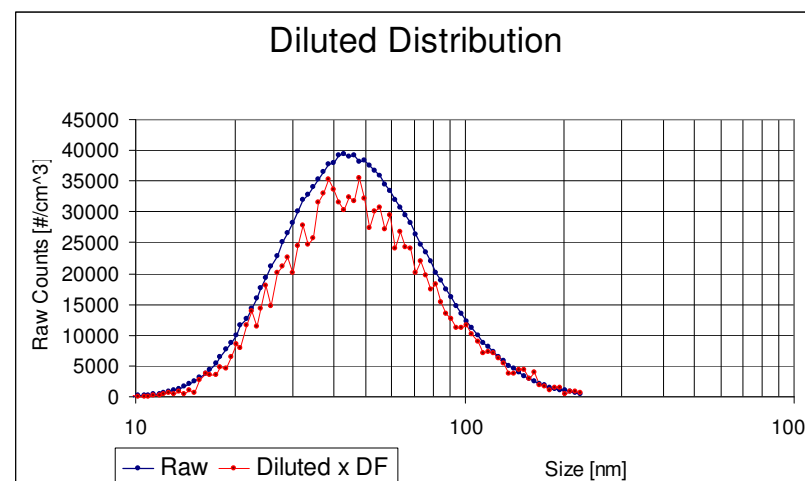
PCRf

PCRf determined according to AEA Calibration Procedure (monodispers):

Size [nm]	PCRf	f _r /f _r (100)
30	192	1,14
50	177	1,05
100	168	
Mean	179	

PCRf determined from polydispers penetration tests (polydispers):

$$PCRf_{poly} = \frac{\int Raw}{\int Diluted} = 180$$



Conclusion

- LCU was modified from its original design to dry aerosol completely in 2007.
 - Particle Size Distribution does not change in the VPR.
 - Comparability between mono- and polydispers penetration is good.
- ➔ NaCl aerosol is sufficiently thermally stable to be used for PCRFB calibration if it is generated and treated the right way.

The image features a solid blue background. In the top-left corner, there is a small globe of the Earth surrounded by three concentric white circles. A thin, white, wavy line curves across the middle of the page. At the bottom, there is a collage of various white icons and symbols, including a tree, a car, a person, a house, a person's face, a globe, and a cluster of dots.

Thank you