

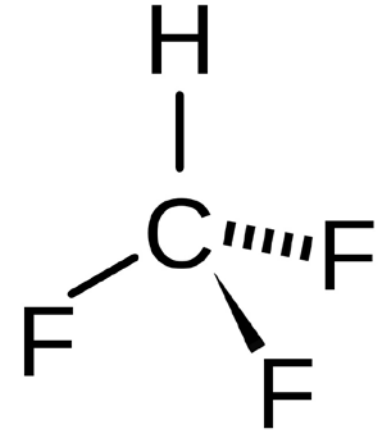


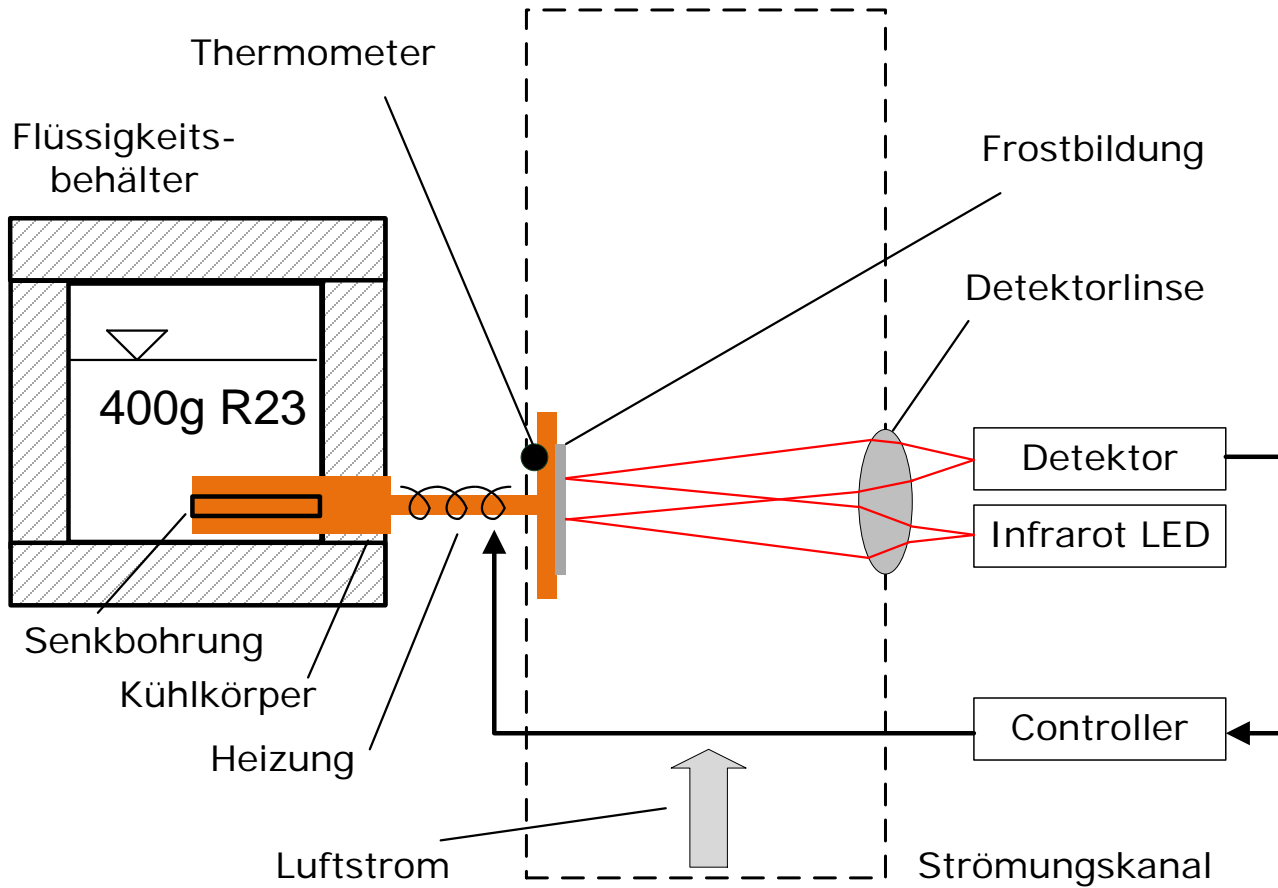
Availability of cryogen for CFH/FPH

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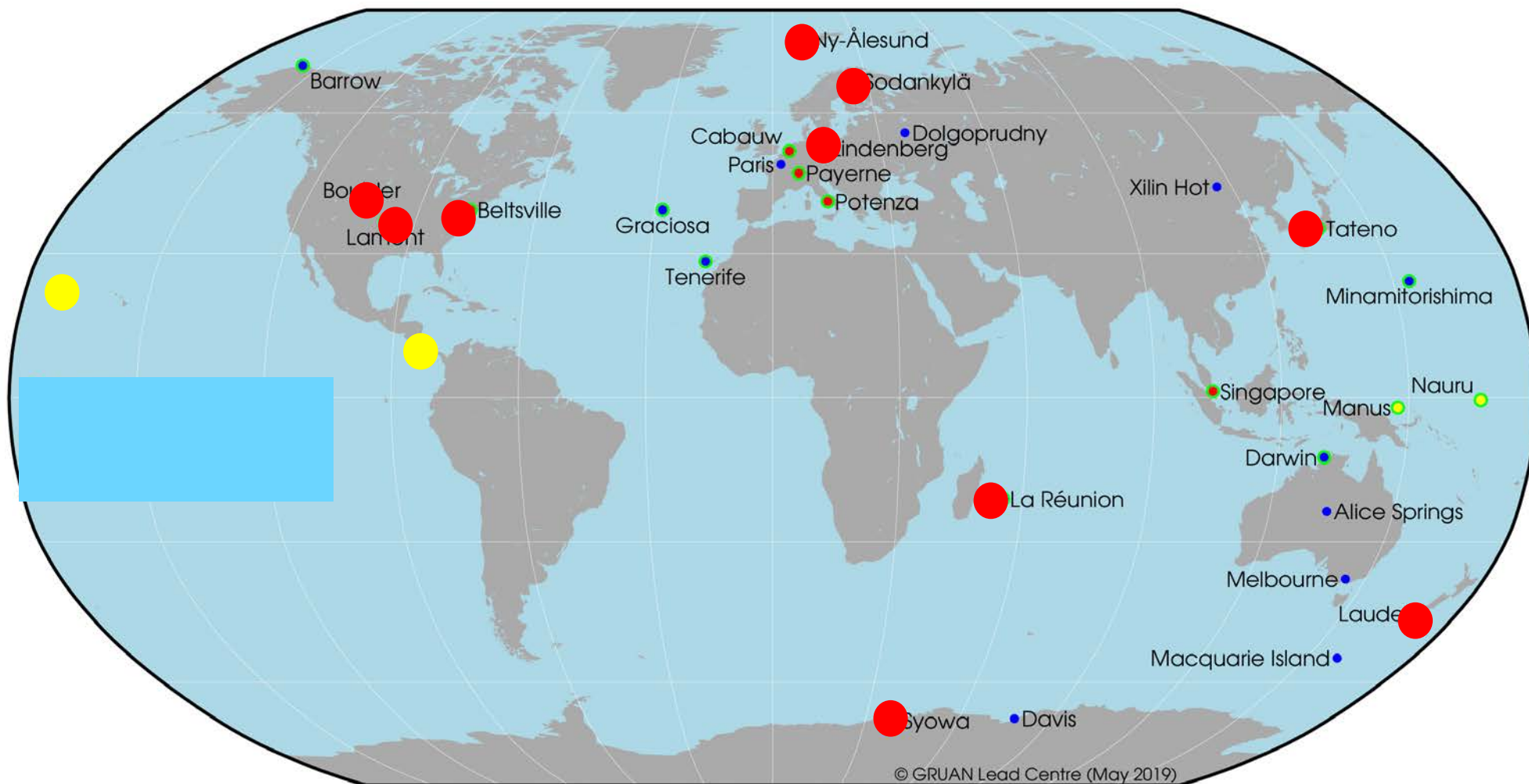
11th GRUAN Implementation and Coordination Meeting (ICM-11)
Singapore
May 2019

- R23 – Fluoroform
- Boiling point -82° C
- P_{trip} 5 hPa
- Heat of evaporation 230 kJ/kg
- Inflammable, non-toxic
- GWP \approx 14,000





Sites with CFH/FPH soundings



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- EU regulation 517/2014, reduction of f-gases
 - Ban on R23 starting 2020

- Reduced availability
 - sale ban EU & Japan
 - Import restrictions

- Increased costs

- USA
 - No availability issues; stockpiling (BOU, LAU)

- EU
 - Stockpiling (LIN, REU)

- Japan
 - Not available, limited supply TAT (2), SYO (6)
 - Switch to Skydew

- Neumayer: postpone start of CFH program

- Alternative cooling method
 - LC – TU Dresden cooperation
 - CFH manufacturer: in progress
- Alternative instruments
 - Skydew, PCFH



