
Contribution ID: **340** Type: **Poster**

# C2Po1C-03: Changes in cooling strategies from 2005 to 2025 at temperatures from 3 K to 25 K using He or H2 as coolants

*Tuesday 20 May 2025 09:15 (1h 45m)*

The strategy for cooling in the temperature range from 3 to 25 K is likely to change because of the working fluid cost (in the case of helium) and safety issues (in the case of hydrogen). In both cases this requires minimizing the inventory of the working fluid for the reasons stated above. These limitations may apply for systems using coolers and definitely apply for systems that involve central refrigeration. This paper covers a range of temperature of interest to superconducting devices that use LTS and HTS conductors. The methods for minimizing the gas inventory are similar for the two gasses. Hydrogen has many advantages for cooling above 15 K. Liquid hydrogen has a heat of vaporization that is over twenty times that of liquid helium. This paper will be show how one can reduce the amount of these liquids in cryostats. Hydrogen appears to be a better working fluid than helium for cooling down a device using natural convection. Hydrogen safety issues and other issues with hydrogen will be discussed

**Author:** GREEN, Michael

**Presenter:** GREEN, Michael

**Session Classification:** C2Po1C - Helium Management and Processing