

Cryogenics and water migration in ETpathfinder

The ETpathfinder facility aims to test and develop techniques for gravitational-wave detection at cryogenic temperatures. Several major technical challenges exist, such as the introduction of mechanical vibrations by the coolers, water migration in the vacuum system, and ice build-up on the cryogenic test masses. The cryogenic design of ETpathfinder aims to minimize the influence of these noise sources. This design, and simulation results will be presented, with a focus on the liquid nitrogen cooling for the intermediate thermal shields and water cryotrap.