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Long-Term-Follow-Up at Superconducting Components under Cryogenic Conditions –Part I: Challenges

In previous IWAA editions we presented a concept which allows the electro-optical observation of targets embedded in a closed cryostat through glass under several environmental conditions; e.g. cryogenic temperatures at 4K. Therefore, the MIDAS program was developed to allow the compensation of refraction effects and the correction of the 3D-position of these cold mass reference points.
Over time, unanticipated issues occurred, which led to deeper considerations of all surrounding and involved parameters and entities. Problems during cryostat operation, that disabled any optical measurement, the shrinking of the reflectors and a change of their inner geometry, the failure of the observation with specific laser trackers and other circumstances caused an adaptation of the whole concept of the measurement under cryogenic conditions. In the first part of this work we present the aforementioned peculiarities.

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