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A technique for the transport of an alignment network through a small hole

In the CNAO accelerator for adrontherapy, a new experimental line and a dedicated hall have been added. The main accelerator hall and the experimental hall are separated by a 2 m thickness concrete wall. The only communication between the two hall is a 20 cm hole, normally closed by a concrete plug.

The alignment network of the main hall has to be connected to a new network in the experimental hall, but using only the laser tracker through the hall would cause unacceptable errors.

Therefore a mixed technique has been developed using a Taylor Hobson telescope and a laser tracker with an inclinometer to obtain a good connection accuracy. In the paper the procedure for the telescope positioning by laser tracker, and for the alignment network expansion in the experimental hall, as well as the evaluation of the accuracy obtained, are reported.

Summary

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