

POSITIONING ALGORITHMS IN THE NOTTE EXPERIMENT

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The airborne NOTTE Experiment aims to bring to the proof some fundamental theories and hypotheses in the elementary particles physics and astrophysics. A collaboration was concluded between Romanian and Italian Institutions to bring the Experiment to the end. An angular position control system was thought to ensure the efficient insulation against the structure vibrations induced by the aircraft and the pointing of the special measurement and recording apparatus towards the center of Eclipse. The success of the operation depends on the performances of the herein involved algorithm. The purpose of our paper is to present several such algorithms. The first, an on-off algorithm, operates as a variable width pulse control. The second algorithm uses a sliding mode control synthesis based on Ackermann's formula. The third algorithm is based on H-infinity optimization. State variable estimation, in the context of the delayed measurements system, was considered: firstly, as a grapho-heuristical approach and secondly, supposing H-infinity control synthesis and estimation. The final, implemented version of the algorithm follows to be soon chosen as a tradeoff between hardware and control performance considerations.