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Modal analysis of a new possible ET base tower lay out

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The mechanical transfer function of the ET towers basement plays a crucial role on the response of the Super-Attenuator (SA), on the stability of the ET suspension and in general on the low frequency performance of ET. For this reason, it is of pivotal importance to investigate the behavior of the ET tower –basement system with a Finite Element modelling technique. Particular emphasis has been placed on the tower basement, investigating a new conical design. A new test facility, CAOS, is under realization in Perugia within the PNRR-ETIC framework, aiming to test mechanical solutions for ET. Two new towers will actually be realized shortly and will be an useful tool to provide feedback on: mechanical performance, construction and economic aspects, functionality of all details and real-scale operational experience with vacuum and payloads.

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