Dear Editors ,

We submit the manuscript having title:” Inventory and monitoring of historical cultural heritage buildings at the territorial scale. A preliminary study of SHM based on CARTI'S approach.”, the authors are: Renato S. Olivito, Saverio Porzio, Carmelo Scuro, Domenico Luca Carnì and Francesco Lamonaca

The manuscript is an extended version of a conference papers presented during 2019 IMEKO TC4 METROARCHAEO in which the basis of this work is presented.

As improvements respect to the paper presented at the conference, in this paper are highlighted:

1. Has been implemented the literature of seismic vulnerability in order to justify the formulation proposed for the identification of the different types of fragility curve.
2. Has been presented the theoretical formulation of equivalent frame model used in order to create the numerical model of the different buildings. In addiction were highlighted the principal innovations of the new Italian Technical Standards introduced in 2019.
3. The preliminary study conducted on the city of Mendicino was implemented as following: 1) greater accuracy of the architectural survey of the buildings 2) parametric analysis conducted on basic models that led to the identification of the buildings to be monitored 3) identification of SHM system with its physical part and cyber part.
4. Identification of a vulnerability ranking of the buildings.

Yours sincerely,

On behalf of all the authors

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