



## **Monitoring and modelling for dry-stone walls terracement maintenance**

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An analysis of dry-stone walls stability in agricultural areas based on innovative monitoring and modeling is here presented. The field test took place in Lamole, a terraced rural area located in the province of Florence, Tuscany, central Italy, where wine production is the most important agricultural activity business. Results show a good capability of the model to predict the time-space distribution and the intensity of stresses on the instrumented dry-stone wall and to describe the bulging of the ancient ones. We obtained significant information on how the terrace failure in Lamole resulted mainly related to the water concentration pathways at specific portions of the walls. An accurate drainage of the terraced slopes, even by means of simple ditches, could reduce the concentration factor at the critical parts of terraces strongly reducing the water pressures on the walls. The analysis of the effects caused by high return time events has been carried out by means of artificially reproduced severe rainfalls on the presented experimental area.