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Nota di contenuto	Chapter 1: Round Table The impact of Covid-19 pandemic on cultural heritage: from fruition to conservation practises -- Chapter 2: Numerical simulation of the Athens 1999 earthquake including simplified models of the Acropolis and the Parthenon: initial results and outlook -- Chapter 3: Randomness in a nonlinear model of sulphation phenomena -- Chapter 4: Automatic description of rubble masonry geometries by machine learning based approach -- Chapter 5: Themes and reflections upon structural analysis in the field of archaeology -- Chapter 6: A model for craquelure: brittle layers on elastic substrates -- Chapter 7: From point clouds to 3D simulations of marble sulfation -- Chapter 8: A semi-analytical approach to approximate chattering time of rocking structures -- Chapter 9: Numerical modelling of historical masonry structures with the finite element code NOSA-ITACA -- Chapter 10: Mathematical Methods for the Shape Analysis and Indexing of Tangible CH artefacts -- Chapter 11: Multiscale carbonation models – a review -- Chapter 12: Forecasting damage and consolidation: mathematical models of reacting flows in porous media

-- Chapter 13: Models and mathematical issues in color film restorations.

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Sommario/riassunto

This book collects contributions presented at the INdAM Workshop "Mathematical modeling and Analysis of degradation and restoration in Cultural Heritage–MACH2021", held in Rome, Italy in September 2021. The book is focused on mathematical modeling and simulation techniques with the aim of improving the current strategies of conservation and restoration in cultural heritage, sharing different experiences and approaches. The main topics are corrosion and sulphation of materials, damage and fractures, stress in thermomechanical systems, contact and adhesion problems, and phase transitions.

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