

Davide Bigoni · Angelo Carini · Massimiliano Gei · Alberto Salvadori *Editors*

## Fracture Phenomena in Nature and Technology

Proceedings of the IUTAM Symposium on Fracture Phenomena in Nature and Technology held in Brescia, Italy, 1–5 July 2012

This book contains contributions presented at the IUTAM Symposium *Fracture Phenomena in Nature and Technology* held in Brescia, Italy, 1–5 July, 2012. The objective of the Symposium was fracture research, interpreted broadly to include new engineering and structural mechanics treatments of damage development and crack growth, and also large-scale failure processes as exemplified by earthquake or landslide failures, ice shelf break-up, and hydraulic fracturing (natural, or for resource extraction or CO<sub>2</sub> sequestration), as well as small-scale rupture phenomena in materials physics including, e.g., inception of shear banding, void growth, adhesion and decohesion in contact and friction, crystal dislocation processes, and atomic/electronic scale treatment of brittle crack tips and fundamental cohesive properties. Special emphasis was given to multiscale fracture description and new scale-bridging formulations capable to substantiate recent experiments and tailored to become the basis for innovative computational algorithms.

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Salvadori *Eds.*



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