

Avalanches and force drops in displacement-driven compression of porous glasses [1]

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Abstract

Similarities between force-driven compression experiments of porous materials and earthquakes have been recently proposed [2, 3]. We measure the acoustic emission during displacement-driven compression of a porous glass. The energy of acoustic-emission events shows that the failure process exhibits avalanche scale-invariance and therefore follows the Gutenberg-Richter law. The resulting exponents do not exhibit significant differences with respect the force-driven case. Furthermore, the force exhibits an avalanche-type behaviour for which the force drops are power-law distributed and correlated with the acoustic emission events.

References

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