

Vandoren, B.; De Proft, K.; Simone, A.; Sluys, L. J.

A novel constrained LArge Time INcrement method for modelling quasi-brittle failure.
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Summary: A novel LArge Time INcrement (LATIN) method is developed. At variance with existing LATIN methods, the proposed algorithm is capable of tracing snap-backs in quasi-brittle materials. Special attention is given to algorithmic implementation as well as to robust and automated choice of algorithmic variables. The performance of the method is verified by its application to numerical examples exhibiting snap-back and bifurcation phenomena in their mechanical response.

MSC:

[74R10](#) Brittle fracture
[74S30](#) Other numerical methods in solid mechanics (MSC2010)
[65L05](#) Numerical methods for initial value problems

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Keywords:

[LATIN method](#); [automated solution control](#); [path-following technique](#); [quasi-brittle failure](#)

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