Abstract Submitted
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The optimisation and use of a Digital Speckle Radiography program to investigate long rod penetration of granular media[1] JOHN ADDISS, ADAM COLLINS, WILLIAM PROUD, University of Cambridge — Digital Speckle Radiography (DSR) is a technique allowing full field displacement maps in a plane within an opaque material to be determined. The displacements are determined by tracking the motions of small sub-sections of a deforming speckle pattern, produced by seeding an internal layer of lead and taking flash x-ray images. An improved DSR program is discussed which can improve the often poor contrast in DSR images such that the mean and variance of the speckle pattern is uniform. This considerably improves the correlation success relative to other similar programs. A series of experiments involving the penetration of granular media by long-rod projectiles, and the improved correlation achieved using this new program, are discussed.

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