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**Measurements of strain propagation in Hopkinson bar specimens**

CLIVE SIVIOUR, DAVID WILLIAMSON, WILLIAM PROUD, University of Cambridge — The research presented in this paper uses the recent application of the speckle technique to the split Hopkinson pressure bar (SHPB), to make measurements of strain propagation in elongated specimens. Specimens of length 20 mm were deformed in an SHPB at impact speeds of approximately  $5 \text{ ms}^{-1}$ . The SHPB was used to measure the stress transmitted through the specimen, and its average deformation. The speckle technique allowed measurements of the deformation field throughout the length of the specimen as the stress wave passed through it. From this field it was possible to calculate the strain associated with the propagating stress wave, and therefore to calculate an effective Young's modulus for the material at high strain rates.

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