

Three-dimensional recording of parameters of a shock-loaded surface and dispersed phase in gas-dynamic studies

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The report presents research and developments in the field of three-dimensional registration of deformable loaded surfaces and particles of the dispersed phase generated during the impact destruction of materials in gas-dynamic experiments. The results of experimental studies are described using methods such as parallax stereography, structured light, and digital dynamic holography. The application of these methods for various setups of gas-dynamic experiments has been developed. The capabilities and limitations of these methods are demonstrated, and options for their integration and joint use with other optical methods - laser heterodyne interferometry and broadband laser ranging - are explored.