



## Pulsed Ultrasound Doppler Velocimetry and Complex Flows

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | A Theoretical and Experimental Study | Ultrasound Doppler Velocimetry (UDV) is a promising non-invasive technique in applications of both practical and scientific flow measurements. Generally UDV measurements of steady-state and laminar flows are encountered in the literature. Capacity of the technique in the measurement of complex flows must be examined. This will allow us to adapt UDV for the monitoring of complex flows and fluids. Therefore interactions of some complex flow mediums with UDV signals are investigated mathematically and experimentally in this book. Oscillating, turbulent/random velocity and linear viscoelastic flows are considered accordingly. Analysis of oscillating flows revealed the limitations of this technique for the measurement of such flows. UDV signals were utilized to obtain statistical properties of random velocity functions/pipe turbulence. UDV signals were utilized to obtain statistical properties of random velocity functions/pipe turbulence. Linear viscoelastic fluids and determination of their properties (complex viscosity, relaxation spectrum) by UDV measurements are considered theoretically in the last part of the book. Basics of UDV, digital signal processing, random processes, turbulent and viscoelastic flows are included in the manuscript to assist the reader. | Format: Paperback | Language/Sprache: english | 136 pp.



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