1. Record Nr. UNINA9910809882503321

Autore	Hallol Zeinab
Titolo	Behaviour of energetic coherent structures in turbulent pipe flow at high Reynolds numbers / / Zeinab Hallol
Pubbl/distr/stampa	Gottingen : , : Cuvillier Verlag, , [2021] ©2021
ISBN	3-7369-6501-X
Edizione	[1st ed.]
Descrizione fisica	1 online resource (147 pages)
Disciplina	532.0527
Soggetti	Turbulence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Intro -- Contents -- List of Figures -- List of Tables -- List of Symbols -- Chapter 1: Introduction -- 1.1 Motivation -- 1.2 Theoretical Background -- 1.3 Objectives of the Thesis -- 1.4 Outline of the Thesis -- Chapter 2: Experimental Facilities andMeasurements Techniques -- 2.1 CoLaPipe -- 2.2 Measurement Techniques -- Chapter 3: Influence of Calibration Methodson HWA Measurements -- 3.1 Theoretical Background -- 3.2 Experimental Setup -- 3.3 Results -- 3.4 Conclusion -- Chapter 4: Kinetic Energy Contributionof Coherent Structures in FullyDeveloped Turbulent Pipe Flowat High Reynolds Numbers -- 4.1 Experimental Background -- 4.2 Experimental Setup -- 4.3 Validation of Hot-Wire Measurements -- 4.4 Results -- Chapter 5: PIV Measurements in PipeFlow -- 5.1 Introduction -- 5.2 Experimental Setup -- 5.3 PIV Measurements Validation -- 5.4 Characterization of Turbulent Structures -- 5.5 Temporal-spatial Analysis -- 5.6 Quadrant Analysis -- Chapter 6: Two-dimensional Spectral Analysisin Pipe Flow -- 6.1 Introduction -- 6.2 Results -- 6.3 Conclusion -- Chapter 7: Proper Orthogonal DecompositionAnalysis (POD) -- 7.1 Introduction -- 7.2 Proper Orthogonal Decomposition -- 7.3 POD Analysis -- 7.4 Conclusion -- Chapter 8: Conclusions and Final Remarks -- 8.1 Comparison Between In-situ and Ex-situ CalibrationMethods -- 8.2 One-dimensional Spectral Analysis -- 8.3 Two-dimensional Spectral Analysis -- 8.3 Two-dimensional Spectral Analysis -- 8.4 Proper Orthogonal Decomposition Analysis -- 8.5