

1. Record Nr.	UNINA9910451309103321
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Titolo	Hydrodynamics around cylindrical structures [[electronic resource] /] / B. Mutlu Sumer, Jørgen Fredsøe
Pubbl/distr/stampa	London, : World Scientific Publishing, c2006
ISBN	1-281-37328-1 9786611373283 1-61583-243-2 981-277-277-4
Edizione	[Revised ed.]
Descrizione fisica	1 online resource (550 p.)
Collana	Advanced series on ocean engineering ; ; v. 26
Altri autori (Persone)	FredsøeJørgen
Disciplina	627.98
Soggetti	Offshore structures - Hydrodynamics Underwater pipelines Cylinders - Hydrodynamics Wave resistance (Hydrodynamics) Ocean currents Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Previous ed. (i.e. 1st ed.) : 1997.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Contents ; PREFACE ; CREDITS ; LIST OF SYMBOLS ; 1. Flow around a cylinder in steady current ; 1.1 Regimes of flow around a smooth circular cylinder ; 1.2 Vortex shedding ; References ; 2. Forces on a cylinder in steady current ; 2.1 Drag and lift ; 2.2 Mean drag 2.3 Oscillating drag and lift 2.4 Effect of cross- sectional shape on force coefficients ; 2.5 Effect of incoming turbulence on force coefficients ; 2.6 Effect of angle of attack on force coefficients ; 2.7 Forces on a cylinder near a wall ; References 3. Flow around a cylinder in oscillatory flows 3.1 Flow regimes as a function of Keulegan-Carpenter number ; 3.2 Vortex-shedding regimes ; 3.3 Effect of

Reynolds number on flow regimes		
3.4 Effect of wall proximity on flow regimes		
; 3.5 Correlation length		; 3.6 Streaming
References	4. Forces on a cylinder in regular waves	
; 4.1 In-line force in oscillatory flow		; 4.2
Lift force in oscillatory flow		; 4.3 Effect of
roughness	; 4.4 Effect of coexisting current	
; 4.5 Effect of angle of attack		; 4.6 Effect of
orbital motion		
4.7 Forces on a cylinder near a wall		4.8
Forces resulting from breaking-wave impact		
; References	; 5. Mathematical and numerical treatment of	
flow around a cylinder		
5.1 Direct solutions of Navier-Stokes equations		
; 5.2 Discrete vortex methods		; 5.3 Hydrodynamic
stability approach		
References		

Sommario/riassunto

This book discusses the subject of wave/current flow around a cylinder, the forces induced on the cylinder by the flow, and the vibration pattern of slender structures in a marine environment. The primary aim of the book is to describe the flow pattern and the resulting load which develops when waves or current meet a cylinder. Special attention is paid to circular cylinder. The development in the forces is related to the various flow patterns and is discussed in detail. Regular as well as irregular waves are considered, and special cases like wall proximities (pipelines) are also investigated.