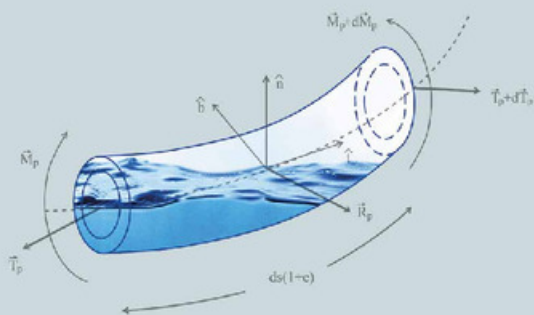


ΙΩΑΝΝΗΣ Κ. ΧΑΤΖΗΓΕΩΡΓΙΟΥ

Αναπληρωτής Καθηγητής Ε.Μ.Π.

Δυναμική των αγωγών μεταφοράς ρευστών

Εφαρμογές στο θαλάσσιο περιβάλλον



Ελληνικά Ακαδημαϊκά Ηλεκτρονικά
Συγγράμματα και Βιβλιόθηκη
www.kallipos.gr

HEALINK
Εθνικό Πρόγραμμα
Ανάπτυξης
2021-2024

Ευρωπαϊκή Ένωση
Ευρωπαϊκό Ταμείο Ανάπτυξης
ΕΥΡΩΠΑΪΚΟ ΚΑΙ ΕΛΛΗΝΙΚΟ
ΚΑΤΑΝΟΜΗΤΟ ΕΠΙΧΕΙΡΙΣΙΟ

METADATA

Title: Dynamics of conduits transfer fluids

Other Titles: Applications in the marine environment

Language: Greek

ISBN: 978-960-603-085-7

Subject: ENGINEERING AND TECHNOLOGY

Keywords: Pipelines and Risers / Hydrocarbons / Dynamic behavior / Marine applications / Floating structures

Bibliographic Reference: Chatjigeorgiou, I. (2015). Dynamics of conduits transfer fluids [Undergraduate textbook]. Kallipos, Open Academic Editions. <http://dx.doi.org/10.57713/kallipos-912>

Abstract

The content of the book focus on the dynamic behavior of thin-walled structures for marine applications (such as hydrocarbon pipelines) and are the result of the author's many years of research. The target audience is broad and includes undergraduate and graduate students, as well as researchers. Its aim is to consolidate existing knowledge into a comprehensive work describing the basic parameters that affect the structural integrity of such structures. To the best of the author's knowledge, there have not been similar publications in Greek. The marine environment is hostile to all structures operating in it. Structural integrity, with an emphasis on fluid transport pipelines, depends predominantly on dynamic effects and, consequently, the prediction of their dynamic behavior is a prerequisite for their safe operation. Prediction is based on the formulation and solution of mathematical

models. The book provides all the necessary knowledge in this direction. It provides the complete mathematical formulation of dynamic equilibrium, taking into account all possible effects. It describes and analyzes the methods for approximating all possible linear and nonlinear contributions. It delves into practical issues that are at the forefront of global technology in offshore construction, such as structural integrity, fatigue, seabed interactions, flutter due to vortex shedding, internal flow effects, etc. Students will acquire the necessary basic knowledge and will be able to refer to it throughout their career. In addition, basic knowledge of applied mathematics is provided for the formulation and solution of boundary value problems. Although the main focus of the book is on thin-walled structures, it can also be used in other areas of structural dynamics.

