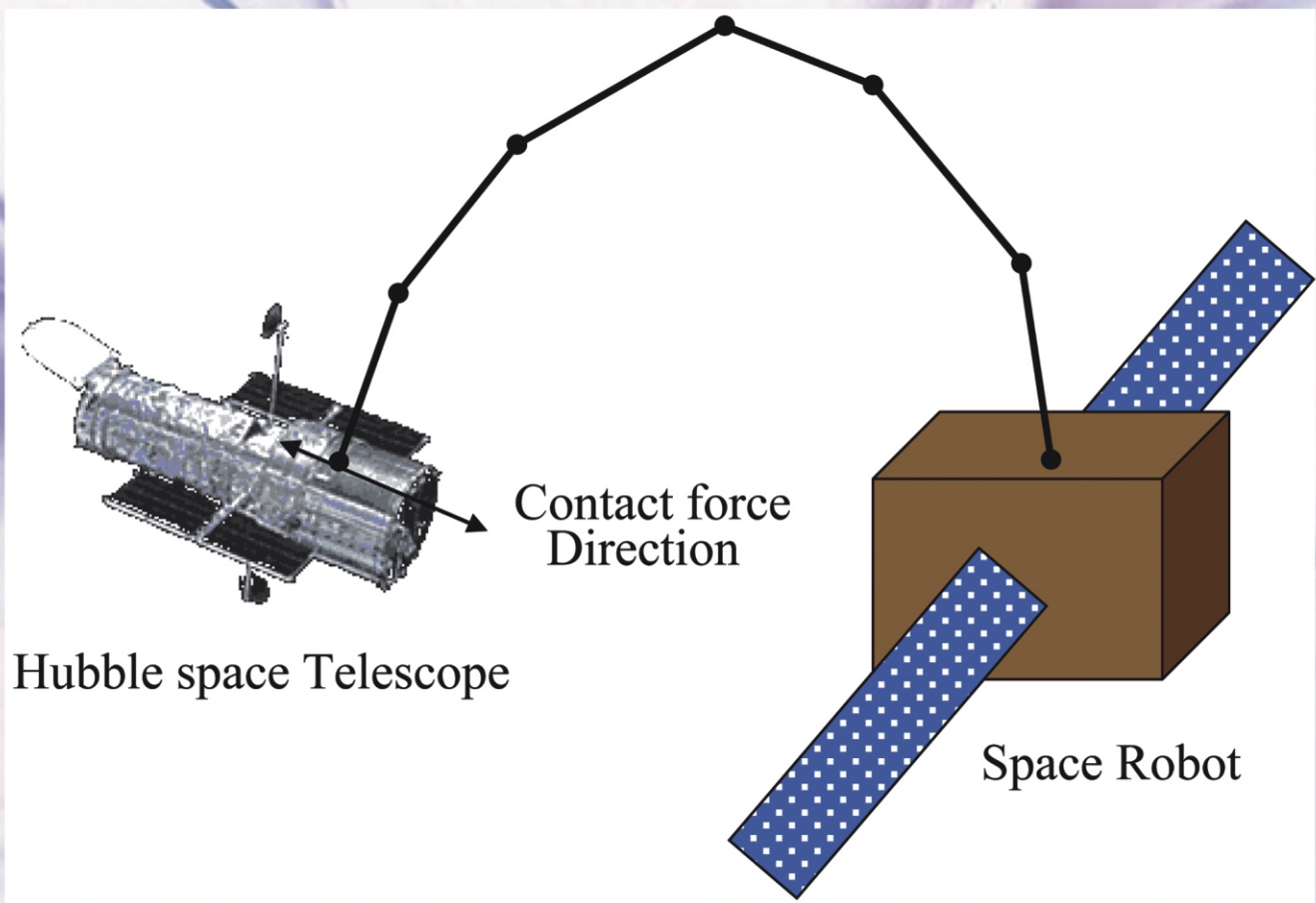




Intelligent Control and Automation



A free-flying space robot conducting a maintenance task on the surface of the Hubble Space Telescope.

ISSN: 2153-0653



Journal Editorial Board

ISSN 2153-0653 (Print) ISSN 2153- 0661 (Online)

<http://www.scirp.org/journal/ica>

Editor in Chief

Prof. Theodore B. Trafalis

University of Oklahoma, USA

Editorial Board

Prof. Ramon Vilanova Arbos

Universitat Autònoma de, Brazil

Prof. Celal Batur

University of Akron, USA

Dr. Derya Birant

Dokuz Eylul University, Turkey

Prof. Pablo Cortés

University of Seville, Spain

Prof. Ru-Xu Du

The Chinese University of Hong Kong, Hong Kong (China)

Prof. Zoran Gajic

Rutgers University, USA

Prof. Vic Grout

Glyndŵr University, UK

Prof. Rafael Martínez Guerra

CINVESTAV-IPN Department of Automatic Control, Mexico

Prof. Yanxiang He

Wuhan University, China

Dr. Tingwen Huang

Texas A&M University, USA

Prof. Ali Vahidian Kamyad

University of Leeds, UK

Prof. Akihiko Kumagai

California State University, USA

Prof. Chuandong Li

Chongqing University, China

Prof. Guay Martin

Queen's University, Canada

Dr. Peter Mitrouchev

Optimization and Production Laboratory of Grenoble, France

Prof. Amalendu Mukherjee

Indian Institute of Technology, India

Dr. Chang-Woo Park

Korea Electronics Technology Institute, Korea (South)

Prof. Dilip Kumar Pratihar

Indian Institute of Technology, India

Prof. A. Karim Qayumi

University of British Columbia, Austria

Dr. José Reinaldo Silva

University of São Paulo, Brazil

Prof. Shuli Sun

Heilongjiang University, China

Prof. Dan Wang

Dalian Maritime University, China

Dr. Jue Wang

Chinese Academy of Sciences, China

Prof. Yaonan Wang

Hunan University, China

Dr. Ronglong Wang

University of Fukui, Japan

Dr. Wai-Keung Wong

Hong Kong Polytechnic University, Hong Kong (China)

Prof. Tiaojun Xiao

Nanjing University, China

Prof. Vinod Yadava

Motilal Nehru National Institute of Technology, India

Dr. Jianfeng Yang

Wuhan University, China

Prof. Ruey-Fang Yu

National United University, Taiwan (China)

Prof. Lijun Zhang

Harbin Engineering University, China

Editorial Assistant

Jiafei Zhao

Scientific Research Publishing, USA. Email: ica@scirp.org

TABLE OF CONTENTS

Volume 2 Number 1

February 2011

Distributed H_{∞} Consensus of High-Order Multi-Agents with Nonlinear Dynamics

J. Z. Li.....1

Unified Modeling Approach of Kinematics, Dynamics and Control of a Free-Flying Space Robot

Interacting with a Target Satellite

M. Shibli.....8

α -Siphons of a Suboptimal Control Model of a Subclass of Petri Nets

D. Y. Chao.....24

Nonlinear Steam Valve Adaptive Controller Design for the Power Systems

N. Jiang, X. Y. Chen, T. Liu, B. Liu, Y. W. Jing.....31

Control of Poly-Articular Chain Trajectory Using Temporal Sequence of Its Joints Displacements

P. Legreneur, T. Creveaux, V. Bels.....38

Optimal Risk-Sensitive Filtering for System Stochastic of Second and Third Degree

M. A. Alcorta-Garcia, S. G. A. Rostro, M. T. Torres.....47

The figure on the front cover is from the article published in Intelligent Control and Automation, 2011, Vol. 2, No. 1, pp. 8-23, by Murad Shibli.

Intelligent Control and Automation (ICA)

Journal Information

SUBSCRIPTIONS

The *Intelligent Control and Automation* (Online at Scientific Research Publishing, www.SciRP.org) is published quarterly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$39 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements

Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: sub@scirp.org

COPYRIGHT

Copyright©2011 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

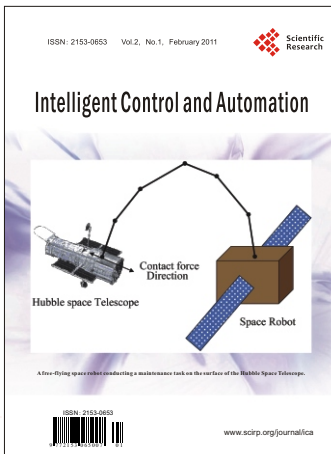
Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: ica@scirp.org



Intelligent Control and Automation (ICA)

ISSN: 2153-0653 (Print), 2153-0661 (Online)

<http://www.scirp.org/journal/ica>

Intelligent Control and Automation is an open access, peer-reviewed and fully refereed journal focusing on theories, methods and applications in intelligent control and automation. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of intelligent control and automation.

Editor-in-Chief

Prof. Theodore B. Trafalis

University of Oklahoma, USA

Subject Coverage

All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy. The journal publishes original papers including but not limited to the following fields:

- Adaptive Controls
- Advanced Control Algorithms and Applications
- Artificial Intelligence and Knowledge Engineering
- Automation System
- Autonomous Systems
- Complex Systems and Intelligent Robots
- Complex Systems, Logistics, and Supply Chain
- Computational Intelligence and Applications
- Control Theory and Control Engineering
- Cooperative Controls (Agent Based Systems)
- Distributed Parameter Systems
- Dynamic Data Driven Application Systems in Intelligent Control
- Ecosystems and Control
- Electronic Commerce and Office Automation
- Hybrid Systems
- Industrial Automation and On-line Monitoring
- Integrated and Complex Automation Systems
- Intelligent Automation and Manufacturing
- Intelligent Control Theory and Applications
- Intelligent Management and Decision Making
- Mechanical Engineering and Automation
- Modeling, Identification, and Fault Diagnosis
- Navigation Control Theory and Applications
- Network Intelligence and Network Control
- Optimization
- Power Systems and Automation
- Robotics, Service and Medical Robotics
- Soft Computings
- Systems and Control Theory and Applications
- Systems Engineering and Engineering Optimization
- Water and Natural Resource Management

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the *ICA*.

Notes for Intending Authors

Submitted papers should not be previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers will be peer reviewed. For more details about the submission, please access the website.

Website and E-Mail

<http://www.scirp.org/journal/ica>

E-mail: ica@scirp.org