

Conceptual Design And Analysis Of High Pressure Ball Valve

Conventional robotic actuators which motive power for manipulators have been commonly limited to three basic types: electric, pneumatic and hydraulic. Each type has advantages and limitations which have dictated their respective suitability for specific applications. However, new manipulator functions may require such qualities as stiffness, high speed, low weight, low inertia, high power output, reversibility, and accurate positioning, which are not usually mutually compatible within an actuator type. With the increased use of robots in industry and the military, new robot-specific actuators will be developed to better meet functional requirements. One concept to be considered is a stiff pneumatic-hydraulic actuator for mobile anthropomorphic robot application. This paper explores the conceptual design feasibility of such an actuator system, and presents a first order system analysis of key parts.

It is commonly asserted that the success of a software development project, and the usability of the final product, depend on the quality of the concepts that underlie its design. Yet this hypothesis has not been systematically explored by researchers, and conceptual design has not played the central role in the research and teaching of software engineering that one might expect. As part of a new research project to explore conceptual design, we are engaging in a series of case studies. This thesis reports on our case study on Git, a popular-yet sometimes puzzling-version control system. In an attempt to understand the root causes of its complexity, we analyze its conceptual model and identify some undesirable properties; we then present a reworking of the conceptual model that forms the basis of Gitless, our redesign of Git.

Second Edition Graphics

Conceptual Design and Analysis of a Dynamic Scale Model of the Space Station Freedom

Advanced Aircraft Design

Non-deterministic Design and Analysis of Parameterized Optical Structures During Conceptual Design

Analysis Methods for Engineering-team Support : Tesi Di Dottorato

Conceptual Design and Systems Analysis of Photovoltaic Systems Final Report

Although the overall appearance of modern airliners has not changed a lot since the introduction of jetliners in the 1950s, their safety, efficiency and environmental friendliness have improved considerably. Main contributors to this have been gas turbine engine technology, advanced materials, computational aerodynamics, advanced structural analysis and on-board systems. Since aircraft design became a highly multidisciplinary activity, the development of multidisciplinary optimization (MDO) has become a popular new discipline. Despite this, the application of MDO during the conceptual design phase is not yet widespread. Advanced Aircraft Design: Conceptual Design, Analysis and Optimization of Subsonic Civil Airplanes presents a quasi-analytical optimization approach based on a concise set of sizing equations. Objectives are aerodynamic efficiency, mission fuel, empty weight and maximum takeoff weight. Independent design variables studied include design cruise altitude, wing area and span and thrust or power loading. Principal features of integrated concepts such as the blended wing and body and highly non-planar wings are also covered. The quasi-analytical approach enables designers to compare the results of high-fidelity MDO optimization with lower-fidelity methods which need far less computational effort. Another advantage to this approach is that it can provide answers to "what if" questions rapidly and with little computational cost. Key features: Presents a new fundamental vision on conceptual airplane design optimization Provides an overview of advanced technologies for propulsion and reducing aerodynamic drag Offers insight into the derivation of design sensitivity information Emphasizes design based on first principles Considers pros and cons of innovative configurations Reconsiders optimum cruise performance at transonic Mach numbers Advanced Aircraft Design: Conceptual Design, Analysis and Optimization of Subsonic Civil Airplanes advances understanding of the initial optimization of civil airplanes and is a must-have reference for aerospace engineering students, applied researchers, aircraft design engineers and analysts.

This presentation will give information on Multi-Disciplinary Analysis and Technology Development, including its objectives and how they will be met. In addition, it will also present recent highlights including the Lift-Offset Civil Design and its study conclusions, as well as, the LCTR2 Propulsion Concept's study conclusions. Recent publications and future publications will also be discussed.

Conceptual Design and Analysis of a Robot Ammunition Loader

Conceptual Design and Analysis of a Solid Breeder Thermomechanics Simulation Experiment, UNICEX

Bridge Design

Conceptual Design and Analysis of a 100 MWe Distributed Line Focus Solar Central Power Plant

Conceptual Design Analysis of a Sea Floor Habitat

Conceptual Design, Technology and Optimization of Subsonic Civil Airplanes

This text explains the concepts behind process design. It uses a case study approach, guiding readers through realistic design problems, and referring back to these cases at the end of each chapter. Throughout, the author uses shortcut techniques that allow engineers to obtain the whole focus for a design in a very short period (generally less than two days).

A horizon detection logic, based on a ratio-of-integrated-radiance concept, which detects the earth's horizon at a relatively stable height under all geographic and meteorological conditions was evaluated by computer simulation on a body of synthesized radiance profiles. An error-sensitivity analysis of the concept was performed, and optimum design parameter values for a sensor were determined. A conceptual design for an improved 15 micron sensor based on this analysis is discussed.

Conceptual Design and Analysis of High-speed Electronic Imaging

Conceptual Design and Analysis of a WEB Handling System for a Large Scale Inkjet Printer for the Textile Industry

Innovative Conceptual Design

Topical Report, September 29, 1978-May 4, 1979

Graphics, Analysis and Conceptual Design

Transportationists for the 1990's and Beyond

This report documents the conceptual design study performed to evaluate design options for a subscale dynamic test model which could be used to investigate the expected on-orbit structural dynamic characteristics of the Space Station Freedom early build configurations. The baseline option was a 'near-replica' model of the SSF SC-7 pre-integrated truss configuration. The approach used to develop conceptual design options involved three sets of studies: evaluation of the full-scale design and analysis databases, conducting scale factor trade studies, and performing design sensitivity studies. The scale factor trade study was conducted to develop a fundamental understanding of the key scaling parameters that drive design, performance and cost of a SSF dynamic scale model. Four scale model options were estimated: 1/4, 1/5, 1/7, and 1/10 scale. Prototype hardware was fabricated to assess producibility issues. Based on the results of the study, a 1/4-scale size is recommended based on the increased model fidelity associated with a larger scale factor. A design sensitivity study was performed to identify critical hardware component properties that drive dynamic performance. A total of 118 component properties were identified which require high-fidelity replication. Lower fidelity dynamic similarity scaling can be used for non-critical components. Davis, D. A. and Gronet, M. J. and Tan, M. K. and Thorne, J. Unspecified Center DESIGN ANALYSIS; DYNAMIC CHARACTERISTICS; DYNAMIC MODELS; SCALE MODELS; SPACE STATION FREEDOM; SPACECRAFT DESIGN; DYNAMIC TESTS; SPACECRAFT CONFIGURATIONS; TRUSSES...

This 2001 book covers theory and applications of conceptual design, the initial stage of engineering design.

Concepts and Analysis

Progress in Conceptual Design and Analysis of Advanced Rotorcraft

A Conceptual Design and Analysis Methodology for Knowledge Acquisition for Expert Systems

Time Line Analysis Report

Conceptual Design and Systems Analysis of Photovoltaic Power Systems. Volume II. Systems. Revised Final Report

Conceptual Design and Analysis of Reactive Distillation Processes for the Production of Isooctane Via Indirect Alkylation

Conceptual designs were made and analyses were performed on three types of solar photovoltaic power systems. Included were Residential (1--10 kW), Intermediate (0.1--10 MW), and Central (50--1000 MW) Power Systems to be installed in the 1985 to 2000 time period. Detailed descriptions of each of the three systems studied, descriptions of the necessary subsystems, and discussions of the interfaces between them are presented. Included also are descriptions of system performance and system cost used to perform an economic analysis which assesses the value of each system.

This study addresses the feasibility of using electronic imaging technology for aeroballistics research. Electronic imaging devices are analyzed with respect to range system characteristics. Optical imaging and illumination parameters in the existing system are defined and quantified. System imaging capability is measured and described by modern imaging systems analysis in terms of the system response to a step function input. Two independent measurements that determine system illumination are described and supporting analysis is included. Concepts critical to data analysis are discussed, along with a survey of available hardware that will image and process projectile flight path data. Recommendations pertinent to the selection of hardware and the overall system organization and maintenance are made.

Conceptual Design of Chemical Processes

Traps and Troughs

Performance Analysis and Conceptual Design

Conceptual Design and Analysis of a Special Operations Transport

Conceptual Design and Analysis of the Tracked Magnetically Levitated Vehicle Technology Program (TMLV)

Theory and Application of Parameter Analysis

A comprehensive guide to bridge design Bridge Design - Concepts and Analysis provides a unique approach, combining the fundamentals of concept design and structural analysis. The book discusses design solutions from the authors' practical experience and provides insights into conceptual design with concrete, steel or composite bridge solutions as alternative design concepts and analysis are dealt with in a unified approach. Execution methods and evolution of the static scheme during construction are dealt with for steel, concrete and

and environmental integration of bridges are considered as an issue for concept design. Bridge analysis, including modelling and detail design aspects, is discussed for different bridge materials. Specific design verification aspects are discussed on the basis of present design rules in Eurocodes. The book is an invaluable guide for postgraduate students studying bridge and structural engineers.

The next generation of space observatories will use larger mirrors while meeting tighter optical performance requirements than current space telescopes. The spacecraft designs must be low-mass, low-cost systems, and be robust to uncertainty since design validation will be based on analysis instead of pre-launch tests. Analytical techniques will be required to identify structural architectures are most appropriate to meet conflicting system requirements, but traditionally, model-based dynamic analysis would only take place after a single point design. Facing future space telescopes require a new approach to conceptual design, and motivate the creation of design tools to identify superior, robust designs earlier in the design life cycle. This paper presents analysis methods. A conceptual design methodology is proposed, in which both nominal performance as well as robustness to uncertainty are evaluated across multiple design realizations. A design environment is created so that for any set of design variables, such as mirror architecture or dimensions of the spacecraft, a finite element model is automatically generated and analyzed on a Computer as a "horseless" Carriage

Conceptual Design and Analysis of the Tracked Magnetically Levitated Vehicle Technology Program (TMLV) - Repulsion Schema

Safety Analysis in Conceptual Design of Process Control

Conceptual Design and Analysis of Service Oriented Architecture (SOA) for Command and Control of Space Assets

Furnace and Heat Recovery Area Design and Analysis for Conceptual Design of Oxygen-Based PC Boiler

Propellant Management Device Conceptual Design and Analysis