

1. Record Nr.	UNINA9910782276803321
Titolo	Dynamics and mission design near libration points . Vol. I Fundamentals : the case of collinear libration points [[electronic resource]]
Pubbl/distr/stampa	Singapore ; ; River Edge, N.J., : World Scientific, 2001
ISBN	1-281-95629-5 9786611956295 981-281-063-3
Descrizione fisica	1 online resource (462 p.)
Collana	World scientific monograph series in mathematics ; ; vol. 2
Altri autori (Persone)	GomezG (Gerard)
Disciplina	521.3
Soggetti	Three-body problem Lagrangian points
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Contents; Foreword; Preface: Introduction: Libration Points and Station Keeping; 0.1 The Neighborhood of Libration Points as a Useful Place for Spacecrafts; 0.1.1 The Libration Points in the Restricted Three-body Problem 0.1.2 The Libration Points in Perturbations of the Restricted Threebody Problem 0.1.3 Possible Missions Around the Libration Points.1.4 The Real Nominal Quasi-periodic Orbit; 0.2 Station Keeping of Libration Point Orbits; 0.2.1 Unstable Nominal Orbits 0.2.2 Requirements for an On/off Control Chapter 1 Bibliographical Survey; 1.1 Numerical Results for Three-dimensional Periodic Orbits Around L1, L2 and L3; 1.1.1 References; 1.1.2 Equations. General Properties; 1.1.3 Linear Theory Around the Equilibrium Points; 1.1.4 Description of the Results 1.2 Analytic Results for Halo Orbits Associated to L1, L2 and L3 1.2.1 References; 1.2.2 Equations of Motion; 1.2.3 Construction of Halo Periodic Solutions; 1.3 Motion Near L4 and L5; 1.3.1 References; 1.3.2 The Triangular Equilibrium Points, Location and Stability; 1.3.3 Numerical Explorations; 1.3.4 Analytic Results; 1.4 Station Keeping 1.4.1 References 1.4.2 The Control of Libration Point Satellites; 1.4.3 Station Keeping for a Translunar Station; 1.4.4 Control of an Unstable

Sommario/riassunto

In this book the problem of station keeping is studied for orbits near libration points in the solar system. The main focus is on orbits near halo ones in the (Earth+Moon)-Sun system. Taking as starting point the restricted three-body problem, the motion in the full solar system is considered as a perturbation of this simplified model. All the study is done with enough generality to allow easy application to other primary-secondary systems as a simple extension of the analytical and numerical computations. Contents: Bibliographical Survey Halo Orbits. Analytical and
