



天津中德应用技术大学
Tianjin Sino-German University of Applied Sciences

AIAA（美国航空航天学会）

数据库使用指南与检索培训

日期





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AIAA 出版社介绍

——背景、学会、出版物简介

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AIAA 数据库使用说明

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AIAA 关键词检索

——结合航空航天学院示例





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AIAA 美国航空航天学会

American Institute of Aeronautics and Astronautics

- 1963年由 **美国火箭学会** 和 **美国宇航科学学会** 合并而成。
- 致力于航空、航天、国防领域的科技发展，是全球最大的非政府、非赢利的专业学会。
- AIAA在国际标准组织(ISO)中担任太空系统运营署(TC20-SC14)，同时是美国国家标准所认定机构。



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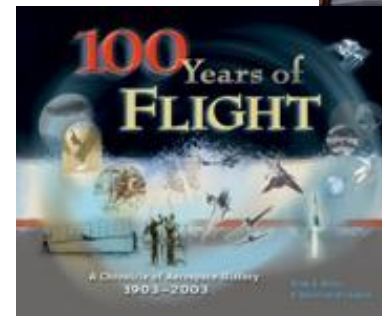
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AIAA 出版物

- AIAA出版物被公认为是早期航空航天文献的重要资源之一，文献最早可回溯至20世纪初。
- 在线数据库回溯到1963年，汇集50多年的出版物资源。
- 出版物包括：期刊、会议论文、杂志、系列图书、美国和国际标准。





AIAA 期刊总览

8 种同行评审 (peer-reviewed) 期刊 , 其中7种被SCI收录, 可回溯至1963年。2017年新增一种期刊 Journal of Air Transportation。

- AIAA Journal
- Journal of Aircraft
- Journal of Guidance, Control, and Dynamics
- Journal of Propulsion and Power
- Journal of Spacecraft and Rockets
- Journal of Thermophysics and Heat Transfer
- Journal of Aerospace Information Systems
- Journal of Energy (已停刊)
- Journal of Hydronautics (已停刊)



AIAA 期刊介绍

- AIAA Journal 《美国航空航天学会志》
 - AIAA出版社的旗舰刊，涉及航空航天领域多个学科的最新理论研究进展、实践应用情况
 - 月刊，**总引用20,946，持续二十年在宇航工程学科排名第一**，影响因子1.951（JCR 2018）
- Journal of Guidance, Control and Dynamic 《制导、控制和动力学期刊》
 - 介绍新一代高性能无人驾驶以及人工驾驶空间飞行器的研究成果以及工程应用状况。
 - 双月刊，总引用量10,838，宇航工程学科排名第三，影响因子2.061（JCR 2018）



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- Journal of Propulsion and Power
《推进与动力期刊》
 - 介绍航空航天动力技术，包括液体推进、固体推进技术的最新技术进展与动态
 - 双月刊，总引用6,538，宇航工程学科排名第六，影响因子1.803（JCR 2018）
- Journal of Spacecraft and Rockets
《航天器与火箭期刊》
 - 报道飞船、火箭（战略战术）技术的最新进展，含附属系统、应用、任务、环境影响及空间科学
 - 双月刊，影响因子1.016（JCR 2018）





- Journal of Thermophysics and Heat Transfer
《热物理学与热传导期刊》
 - 关注热物理与热传导，探讨气态、液态、固态热能的传递与储存技术发展
 - 季刊，影响因子1.051（JCR 2018）
- Journal of Aircraft 《飞行器期刊》
 - 重点报道飞机技术发展的各个领域，包括飞机系统设计与优化、制造、飞行力学、飞行与地面测试、后勤保障与供给、飞机可靠性与维护、飞行安全、天气与噪音控制、人为因素、机场设计、航线运行、计算机在飞机技术中的应用等
 - 双月刊，影响因子0.963（JCR 2018）





AIAA 期刊品质

Subject: ENGINEERING, AEROSPACE

总期刊数量：31

数据来源：JCR 2018

- 总引用量排名前10位的期刊中，AIAA占据5席。
- 这5份期刊引用量总计48,397次，宇航工程学科所有期刊的引用量总计97,929次，AIAA期刊占比约50%

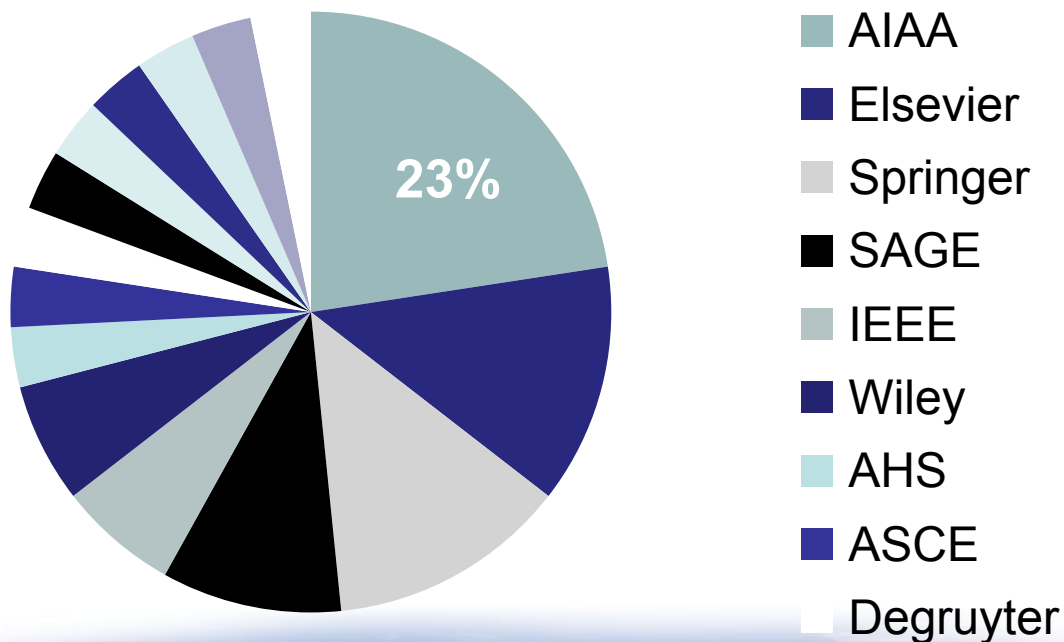
期刊名称	引用量排名	总引用量	影响因子
AIAA JOURNAL	1	20,946	1.951
J GUID CONTROL DYNAM	3	10,838	2.061
J PROPUL POWER	6	6,538	1.803
J AIRCRAFT	7	6,355	0.963
J SPACECRAFT ROCKETS	9	3,720	1.016

* Journal of Thermophysics and Heat Transfer 被分在 THERMODYNAMICS 学科类别



宇航工程核心期刊源分布

宇航工程 (ENGINEERING, AEROSPACE) 学科共收录期刊31种，其中AIAA是最大的期刊源，被收录7种，占23%。排其之后的依次是Elsevier、Springer和SAGE。





提纲CONTENTS

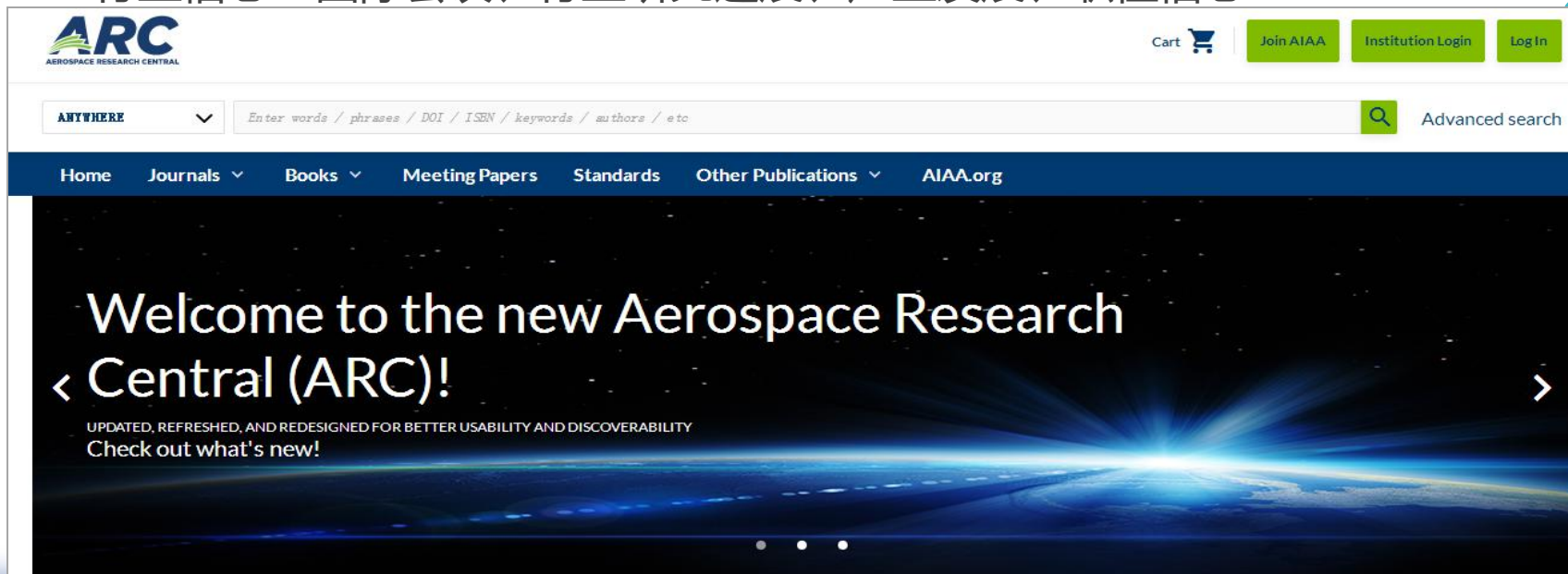
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进入方式

两种方式：

--- ARC平台网址：<http://arc.aiaa.org/>

--- 由AIAA主页进入，AIAA主页网址：<https://www.aiaa.org/>

AIAA主页的
ARC平台链接

The screenshot shows the AIAA website homepage. The top navigation bar includes: AIAA (SHAPING THE FUTURE OF AEROSPACE), EVENTS & LEARNING, GET INVOLVED, PUBLICATIONS, NEWS, ADVOCACY, CAREERS, and MEMBERSHIP. The main content area is titled "Resources" and features four columns:

- ARC (AEROSPACE RESEARCH CENTRAL)**: Find premiere aerospace technology, engineering, and science content and research across 100+ topics. Below the logo is a red-bordered box with a red arrow pointing to the text "AIAA主页的 ARC平台链接". Below the text is a green button labeled "SHOP PUBLICATIONS >".
- Engage**: Connect with all of your AIAA colleagues online. Find your community and join the conversation. Below the text is a green button labeled "JOIN THE CONVERSATION >".
- AIAA FOUNDATION**: Support the next generation of aerospace professionals through innovative educational programs and recognition. Below the text is a green button labeled "DONATE >".
- INDUSTRY GUIDE**: Search a list of businesses and contacts in the astronomical and aeronautical industries. Below the text is a green button labeled "INDUSTRY GUIDE >".

ARC 平台主页

最新文章、图书

LATEST ARTICLES LATEST BOOKS

Extension of a Standard Flow Solver for Simulating Phase Change in Cryogenic Tanks

Martin Konopka

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Lt Col Armando DeLeon, William P. Baker and Anthony N. Palazotto

Journal of Thermophysics and Heat Transfer • Articles in Advance

Optimal Path Planning for Unmanned Aircraft Target Observation Through Constrained Urban Environments

Michael D. Zollars, Richard G. Cobb and David J. Grymin

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Journal of Guidance, Control, and Dynamics • Articles in Advance

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Journal of Propulsion and Power • Vol. 33, No. 4

Modal Analysis of Fluid Flows: An Overview

Kunihiko Taira, Steven L. Brunton, Scott T. M. Dawson, Clarence W. Rowley, Tim Colonius, Beverley J. McKeon, Oliver T. Schmidt, Stanislav Gordeyev, Vassilios Theofilis and Lawrence S. Ukeiley

AIAA Journal • Vol. 55, No. 12

Basic Understanding of Airfoil Characteristics at Low Reynolds Numbers (104–105)

Justin Winslow, Hikaru Otsuka, Bharath Govindarajan and Inderjit Chopra

Journal of Aircraft • Vol. 55, No. 3

Model Predictive Path Integral Control: From Theory to Parallel Computation

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Journal of Guidance, Control, and Dynamics • Vol. 40, No. 2

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期刊浏览

The screenshot shows the ARC website interface. At the top, there are navigation links for 'Home', 'Journals', 'Books', 'Meeting Papers', 'Standards', 'Other Publications', and 'AIAA.org'. A search bar is present with the text 'Enter words / phrases / DOI / ISBN / keywords / authors / etc'. Below the search bar, a dropdown menu for 'Journals' is open, listing various journals. The 'Browse All Journals' option at the bottom of this menu is highlighted with a red box. A red arrow points from this box to a yellow callout box on the left side of the page. The main content area displays a list of journals, including 'Journal of Guidance, Control, and Dynamics' and 'Journal of Propulsion and Power'.

点击浏览全部期刊

期刊浏览



ARC

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CATEGORIES

Active	8
Retired	10

Journals (18)

PER PAGE: 20 50 100 • SORT BY: RECENTLY PUBLISHED
 ALPHABETICALLY

Journal of Guidance, Control, and Dynamics
Volume 42, Number 5 • May 2019
eISSN: 1533-3884

Journal of Propulsion and Power
Volume 35, Number 3 • May 2019
eISSN: 1533-3876

AIAA Journal
Volume 57, Number 4 • April 2019
eISSN: 1533-385X

Journal of Aerospace Information Systems
Volume 16, Number 4 • April 2019
eISSN: 2327-3097

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AIAA Journal 为例，
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期刊浏览

The screenshot shows the AIAA Journal website interface. At the top, there is the ARC (Aerospace Research Central) logo and navigation links for 'Join AIAA', 'Institution Login', and 'Log In'. A search bar is present with the text 'Enter words / phrases / DOI / ISSN / keywords / authors / etc'. Below the search bar is a navigation menu with 'Home', 'Journals', 'Books', 'Meeting Papers', 'Standards', 'Other Publications', and 'AIAA.org'. The main header features the 'AIAA Journal' title, the Editor-in-Chief's name (Alexander J. Smits), the frequency (Monthly), and the eISSN (1533-385X). There are buttons for 'Subscribe/Renew' and 'Submit an article'. The 'Archive' section is highlighted with a red arrow pointing to a red box around 'Volume 57, Number 4 • April'. The 'Current Issue' section shows 'Volume 57, Number 4 • April 2019'.

选择所需阅读的卷期



The screenshot shows the AIAAJ website interface. At the top, there is a navigation bar with the ARC logo, a search bar, and links for 'Join AIAA', 'Institution Login', and 'Log In'. Below the navigation bar, there are sections for 'Sections', 'EXPRESS ARTICLES', and 'REGULAR ARTICLES'. Two articles are listed:

- Plasma Actuator-Assisted Rocket Nozzle for Improved Launcher Performance**
Andrea Ferrero and Dario Pastrone
pp. 1348-1354
<https://doi.org/10.2514/1.J057956>
ABSTRACT ▾ Abstract Full text PDF PDF Plus
- Flame Diagnostics with a Conservative Representation of Chemical Explosive Mode Analysis**
Wantong Wu, Ying Piao, Qing Xie and Zhuyin Ren
pp. 1355-1363
<https://doi.org/10.2514/1.J057994>
ABSTRACT ▾ Abstract Full text PDF PDF Plus

On the right side, there is a 'THIS ISSUE' section with the AIAAJ logo and the text 'Volume 57 April 2019'. Below it is a 'SITE TOOLS' section with 'Sign up for e-alerts' and 'RSS'. At the bottom right, there is a 'SUBSCRIBE' section with 'Online' membership options: 'Member: \$140.00' and 'Non-member: \$2,425.00', and a 'Buy / Review' button.

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Wildcards

Use a question mark (?) in a search term



检索提示及通配符的使用

- **使用星号 “*” 提高检索的全面程度**，例如：输入 “aero*” 进行检索，系统将对 “aerospace” “aerodynamic” 等含有 “aero” 的关键词进行全面检索
- **关键词不使用引号 “” 将遵循以下准则：**
 1. 关键词的扩大，例如检索 “model” 的结果中将包含 “model” “modeling” “models and vice versa” 等
 2. 检索不区分大小写
 3. 检索引擎不识别单词之间的空格
 4. 检索不区分外来词语，例如检索 “café” 等同于 “cafe”
- **词组使用 “” 将遵循以下准则：**
 1. 检索不区分大小写
 2. 搜索引擎不识别单词之间的空格
 3. 检索不区分外来词语，例如检索 “café” 等同于 “cafe”
 4. 通配符将不再作用
 5. 检索字段不再扩大



检索航空航天关键词

- 飞行器制造技术（航天器方向），如 航空器结构设计 ‘Aircraft Structural Design’

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All dates

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To

Advanced

Open access content only

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输入 Aircraft Structural Design 以及 AIAA Journal 旗舰刊

选择时间范围，如近三年 2017-2019

检索范围选择已订购内容，Only content I have full access to

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Search

ANYWHERE

Aircraft Structural Design



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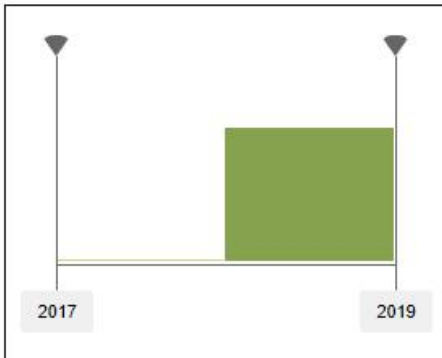
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AUTHORS

Raveh, Daniella E	5
Opgenoord, Max M J	4
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Load Case Characterization for the Aircraft Structural Design Process

A. Dharmasaroja, C. G. Armstrong, A. Murphy, T. T. Robinson, S. H. M. McGuinness, N. L. Iorga and J. R. Barron

AIAA Journal • Volume 55, Issue 8

<https://doi.org/10.2514/1.41000>

Abstract

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Bilevel Programming Weight Minimization of Composite Flying-Wing Aircraft with Curvilinear Spars and Ribs

Wei Zhao and Rakesh K. Kapania

AIAA Journal • Volume 57, Issue 6

<https://doi.org/10.2514/1.4057892>

er service life, a large volume of global load cases must be
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the SVD was directly performed on the master set are shown. The relevant error quantification methods were applied to investigate the error occurring from the approximation. Second, the experiment when all 274 load cases were included in A is also included. Third, the SVD was directly performed on the slave set. The pseudoinverse was applied to transform the loadings in the slave set into the existing characteristic load spaces.

The SVD was computed using the predefined SVD function in MATLAB, which is computationally efficient. To illustrate, the time used to compute the SVD of a matrix with 1 million entries is less than 0.1 ms on a standard PC with a quad-core processor.

G. Method Demonstrator on Wing External Load Cases: Master Load Cases and All Load Cases

The SVD products decomposed from the original matrix A were used to calculate the reduced-rank characteristic loads L_k as described by Eq. (12). The Frobenius norm percentage error estimator of the errors due to approximating A from k characteristic loads were subsequently determined by using Eq. (7) and plotted as a function of k as shown in Fig. 1.

Examining Fig. 1, the approximation error computed from the first characteristic load L alone (i.e., $k = 1$) produces the maximum error at around 22%, and the error reduces as the number of characteristic loads increases. For 25 characteristic loads, the relative error between the reduced-rank approximation and the original matrix, as calculated by the Frobenius norm, is equal to approximately 0.1%. Because the Frobenius norm only estimates the approximation error of the entire matrix, the accuracy of individual forces and moments was investigated. The reduced-rank approximation preserves the singular

the master set now becomes $A = (274 \times 162)$, and so its effective rank has been altered. Although the rank of the previous matrix is equal to the size of the rows ($r = 100$), the rank of the new matrix is equal to the size of the columns ($r = 162$). Therefore, the maximum number of characteristic loads (k) has changed from 100 to 162.

The error when using 1–162 characteristic load cases to approximate 274 master load cases is shown in Fig. 4. There is no dramatic difference between the new error result compared to the previous one, where the number of the master load cases is 100, for

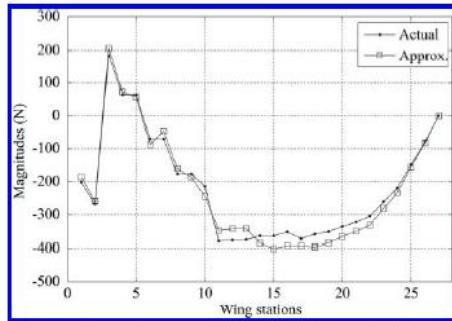
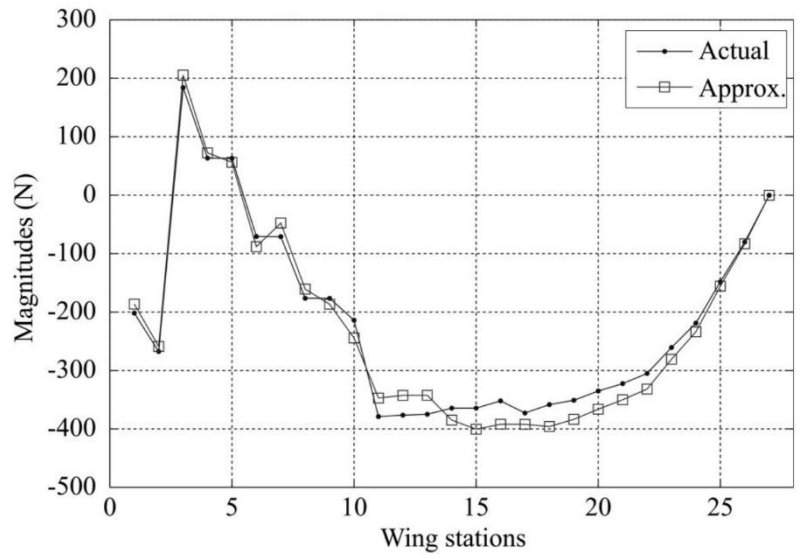


Fig. 2 Actual vs approximated F_y (smallest magnitude component) (load case 89, $k = 25$).

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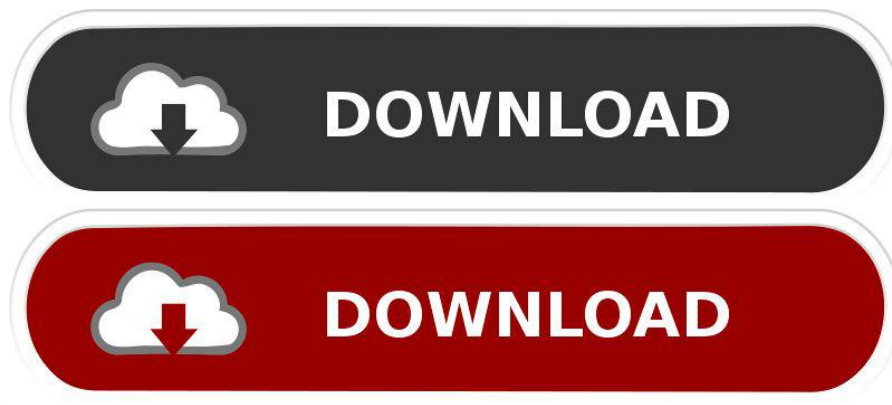


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