


MAKING A STATE OF THE ART




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What a state of the art should not be



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What a state of the art should not be

A stat-of-the-art **should not be** a collection of paragraphs detailing the content of a set of papers separately

Bad example of a state-of-the-art review :



International Research Journal of Engineering and Technology (IRJET)

Volume: 04 Issue: 03 | Mar -2017

www.irjet.net

e-ISSN: 2395-0056

p-ISSN: 2395-0072

Seismic Effectiveness of Tuned Mass Damper - A Review

Shilpa Chandran.P¹, Dr. CK Prasad Varma Thampan²

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Checking the quality of a paper

A simple search on google scholar

https://scholar.google.fr/scholar?hl=fr&as_sdt=0,5&q=seismic+effectiveness+of+tuned+mass+dampers+-+a+review



→ The paper is not present on google scholar. Be careful ...

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Checking the quality of a journal

The screenshot shows the homepage of the International Research Journal of Engineering and Technology (IRJET). The website features a navigation menu with options like Home, About Us, Current Issue, Past Issue, Archives, For Authors, Pay Online, FAQ, and Contact Us. A sidebar on the left lists various services such as 'Call for Paper: Feb 2020', 'Submission Last Date: 29-Feb', 'Review Status: In 2 Days', and 'Online Publication: In 2 Days'. The main content area describes the journal as a peer-reviewed, open access, high-impact factor journal. It highlights several quality metrics and features:

- Why Select IRJET?**
 - An ISO 9001:2008 Certified International Journal.
 - Fast, Easy and Transparent paper publication process.
 - Low publication fee to promote the research work.
 - IRJET Impact factor value : 7.34 for the year 2019
 - IRJET is indexed in Google Scholar, academia.edu, Scribd, Slideshare & more..
 - UGC Approved Journal in 2017.
 - Open Access Journal database for high visibility and promotion of your articles.
 - Open Access Journal (No Subscription required to download Papers).
 - Strict Plagiarism Policy
 - IRJET provides Free Soft Copy of Certificate of Publication to each Authors.
 - IRJET provides Hardcopy Certificate of Publication to each Authors.
 - Authors can submit the papers at any time by online submission.
 - Authors can pay Accepted paper publication Fee online by Net Banking/ Credit Card/ Debit Cards/ UPI/ Mobile Payment/ Paypal, instantly in any day any time.
 - Transactions on the site are protected with 256-bit Secure Sockets Layer (SSL) encryption.

On the right side, there is a 'IRJET: Highlight's' section featuring logos for 'QUALITY MANAGEMENT SYSTEM', 'ISO 9001:2008 CERTIFIED', 'OPEN Access JOURNAL', 'IRJET Impact Factor 7.34', 'Google Scholar', '29,000+ Articles Published', and 'ISSN'. At the bottom right, there is a 'IRJET Citation Report' link.

<https://www.irjet.net>

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Checking the quality of a journal

Information found on scopus

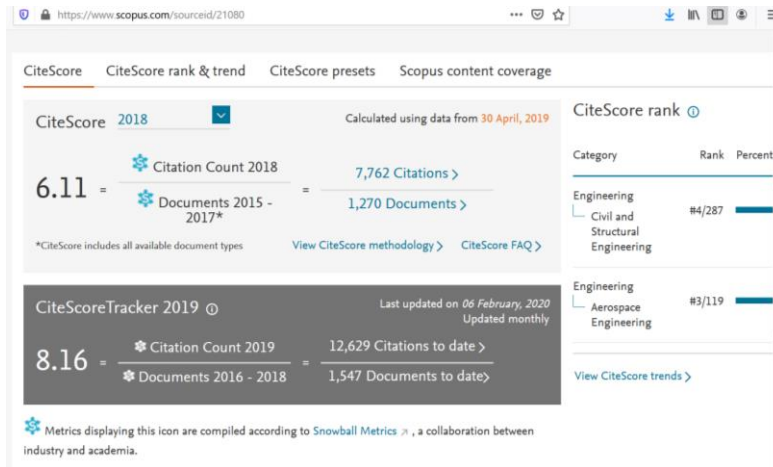
The screenshot shows the Scopus website displaying CiteScore and CiteScoreTracker metrics for a specific source. The main section shows the CiteScore 2018, calculated using data from 30 April, 2019. The CiteScore is 0.70, based on 7 Citations and 10 Documents (2015-2017). Below this, the CiteScoreTracker 2019 is shown, last updated on 06 February, 2020. The CiteScoreTracker is 0.38, based on 62 Citations to date and 163 Documents to date (2016-2018). A sidebar on the right displays the CiteScore rank for the source, showing a rank of #142/275 in the Engineering - General Engineering category and #127/197 in the Energy - Engineering and Power Technology category. A note at the bottom states that metrics displaying the Snowball Metrics icon are compiled according to Snowball Metrics, a collaboration between industry and academia.

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Checking the quality of a journal

Comparing with a well established journal :

Mechanical Systems and Signal Processing

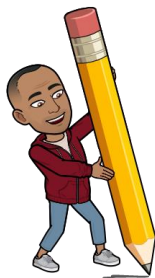


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What a state of the art should not be

3. LITERATURE REVIEW

Some literature reviewed about TMD in buildings, is presented in this section. There are number of works have been performed on seismic effectiveness of tuned mass damper by different scholars and researchers.



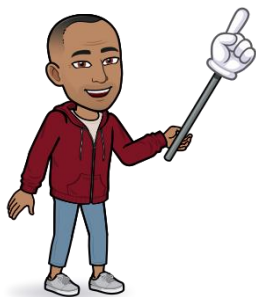
Chi-Chang Lin, Jin-Min Ueng, Teng-Ching Huang(1999), "Seismic response reduction of irregular buildings using passive tuned mass dampers": This paper discussed about the practical considerations and vibration control effectiveness of passive tuned mass dampers (PTMDs). And they applied TMD for irregular buildings, modelled as multi-storey torsionally coupled shear buildings, under bi-directional horizontal earthquake excitations. Its moving direction and optimum installation location are determined from the controlled mode shape values. They calculated optimal system parameters of PTMD's by minimizing the mean-square total modal displacement response ratio of controlled mode between the building with and without PTMD under the earthquake excitation from critical direction. The damper able to reduce the building responses effectively.

- This is **just a summary** of the information found in the paper
- There is **no critical assessment of the relevance** of the paper
- There is **no discussion on limitations, pros and cons** of the methods presented in the paper

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What a state of the art should not be

3. CONCLUSIONS



Recently use of seismic control systems has increased, but choosing best damper and installing it into a building is very important for reducing vibration in structures when subjected to seismic loading. Passive control systems are reliable and they doesn't require any external power. TMD is one of the best passive dampers.

→ Is there a clear link between these conclusions and the literature review ??

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What a state of the art should be



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Approach to write a state of the art

Based on the information collected, the state of the art should

- Present the literature review in a structured way (type of method/model used, type of application, ...)
- Identify the applicability/limitations of the methodologies presented
- Identify what is lacking in the literature in order to solve the problem at hand



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Example



Example of a well-structured state of the art

Hindawi
Shock and Vibration
Volume 2019, Article ID 9273714, 9 pages
<https://doi.org/10.1155/2019/9273714>



Research Article

Robust Optimum Design of Multiple Tuned Mass Dampers for Vibration Control in Buildings Subjected to Seismic Excitation

Luciara Silva Vellar ¹, Sergio Pastor Ontiveros-Pérez ¹, Leticia Fleck Fadel Miguel ¹
and Leandro Fleck Fadel Miguel ²

→ Scopus shows that this journal is clearly more serious.

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Example : structure of the state of the art

The paper contains 60 references.

Structure of the state-of-the art :

- Origin and type of damping devices
- Types of TMDs
- Application to buildings
- Current limitations (1 mode)
 - Proposed approach to overcome limitation
 - MTMD optimization method
 - Taking into account uncertainties



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RMCE Homework 2

Based on the 7 summaries produced for homework 1, write a short state of the art on the topic of “*Monitoring of concrete degradation during freeze-thaw cycles using embedded piezoelectric transducers*”

The SoA should

- Start with an introduction to the context/motivation of the study
- Present in a structured way (there are several options) what has been done before
- Identify what is lacking to introduce what will be done in this project

Homework is due **monday March 8 at the latest**

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