# Article information:

A simple and precise formula for magnetic forces in nonlinear piezoelectric energy harvesting | SpringerLink  
<https://link.springer.com/article/10.1007/s11071-022-08160-5>

# Article summary:

1. Traditional linear piezoelectric energy harvesters (PEHs) suffer from a narrow operating bandwidth.

2. To improve the energy harvested efficiency, nonlinear PEHs have been proposed which introduce a nonlinear magnetic interaction.

3. This article proposes two high-precision magnetic force formulas for cylindrical and cuboidal magnets to reduce the error in the previous theoretical analysis.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is generally reliable and trustworthy, as it provides detailed information on the topic of nonlinear piezoelectric energy harvesting and presents two high-precision magnetic force formulas for cylindrical and cuboidal magnets to reduce the error in the previous theoretical analysis. The article also cites relevant research papers to support its claims, which adds to its credibility.

However, there are some potential biases that should be noted. For example, the article does not explore any counterarguments or present both sides of the argument equally; instead, it focuses solely on presenting one side of the argument in favor of nonlinear PEHs. Additionally, while it does cite relevant research papers to support its claims, it does not provide any evidence for these claims or explore any possible risks associated with this technology. Furthermore, some of the language used in the article could be seen as promotional content that is biased towards nonlinear PEHs rather than providing an unbiased overview of both sides of the argument.

In conclusion, while this article is generally reliable and trustworthy due to its detailed information on nonlinear piezoelectric energy harvesting and citing relevant research papers to support its claims, there are some potential biases that should be noted such as lack of exploration into counterarguments or risks associated with this technology and promotional content that is biased towards nonlinear PEHs rather than providing an unbiased overview of both sides of the argument.

# Topics for further research:

* Nonlinear Piezoelectric Energy Harvesting Risks
* Counterarguments to Nonlinear Piezoelectric Energy Harvesting
* Magnetic Force Formulas for Cylindrical and Cuboidal Magnets
* Error Reduction in Theoretical Analysis of Nonlinear Piezoelectric Energy Harvesting
* Unbiased Overview of Nonlinear Piezoelectric Energy Harvesting
* Promotional Content for Nonlinear Piezoelectric Energy Harvesting

# Report location:

<https://www.fullpicture.app/item/8c17a33de4ef1f3807c3f963fac0b3af>