# Article information:

Magmatic crystallization drives zircon Zr isotopic variations in a large granite batholith - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0016703722006500?via%3Dihub>

# Article summary:

1. Magmatic crystallization plays a critical role in zircon Zr isotopic variations.

2. Variability of δ94/90Zr values and multiple types of Zr isotopic profiles in zircons are predominantly driven by the compositional effect of adjacent melts from which zircons crystallize.

3. In-situ zircon Zr isotopes can be used as a novel indicator to trace the complexity of mushy plutonic bodies.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article “Magmatic crystallization drives zircon Zr isotopic variations in a large granite batholith” is an informative and well-researched piece that provides insight into the effects of magmatic processes on zircon Zr isotopic variations. The authors provide evidence for their claims through detailed petrological work, high-spatial-resolution in-situ methods on magmatic zircons, and comprehensive geochemical proxies in granitoid zircons. The article is written in an unbiased manner, presenting both sides equally and exploring counterarguments where necessary. The authors also note potential risks associated with their findings, such as the possibility of open-system magmatic processes influencing the results.

The only potential issue with this article is that it does not explore other possible sources for the observed Zr isotopic variations, such as diffusion processes or contamination from external sources. However, given that these processes are not relevant to the study area or research question at hand, this omission does not significantly detract from the overall trustworthiness and reliability of the article.

# Topics for further research:

* Diffusion processes and zircon Zr isotopic variations
* Contamination of zircon Zr isotopic variations
* Magmatic processes and zircon Zr isotopic variations
* Open-system magmatic processes and zircon Zr isotopic variations
* High-spatial-resolution in-situ methods on magmatic zircons
* Geochemical proxies in granitoid zircons

# Report location:

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