# Article information:

Substrate size and heterogeneity control anomalous transport in small streams - Aubeneau - 2014 - Geophysical Research Letters - Wiley Online Library
<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2014GL061838>

# Article summary:

1. Streams naturally exhibit broad distributions of velocity and associated time scales that influence solute transport, often resulting in anomalous transport.

2. Conventional models cannot capture these anomalous behaviors, but emerging models can.

3. This study conducted conservative solute additions in experimental streams to determine if truncations in controlled field conditions could be observed, and found that the size and heterogeneity of the substrate influences anomalous transport and the occurrence of a truncation time.

# 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 evidence for its claims through experiments conducted at the Notre Dame Linked Experimental Ecosystem Facility (ND-LEEF). The authors provide a thorough introduction to the topic, discussing existing models and their limitations before introducing their own hypothesis. They also provide a detailed description of their methods, which helps to ensure that their results are valid. Furthermore, they discuss potential implications of their findings for reactive transport and biological transformations in fluvial systems.

However, there are some potential biases present in the article. For example, while the authors discuss existing models and their limitations, they do not explore any counterarguments or alternative explanations for why these models may not be able to capture anomalous behaviors in streams. Additionally, they do not present both sides equally when discussing truncation times; instead they focus on how truncation times can improve fits to observed data without exploring any potential drawbacks or risks associated with this approach. Finally, there is no mention of possible sources of error or uncertainty in their experiments or results; this could lead readers to overestimate the accuracy of their findings.

# Topics for further research:

* Counterarguments to existing models of fluvial systems
* Potential drawbacks of truncation times
* Sources of error in experimental results
* Uncertainty in reactive transport models
* Biological transformations in fluvial systems
* Anomalous behaviors in streams

# Report location:

<https://www.fullpicture.app/item/d333bed01d800ef7883656c447801cb7>