# Article information:

Effect of Viscoplasticity on Localization in Saturated Clays and Plastic Silts | Journal of Geotechnical and Geoenvironmental Engineering | Vol 149, No 4
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# Article summary:

1. A numerical study was conducted to evaluate the effects of viscoplasticity on localization processes in sensitive, saturated clays and plastic silts.

2. The results showed that the global strain at which a localization forms depends on the strain rate dependency of the soil’s shearing resistance relative to its rate of postpeak strain softening.

3. The inclusion of reasonable levels of viscoplasticity significantly increases the strain that can develop before a localization develops in clays and plastic silts with modest strain-softening rates.

# 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 “Effect of Viscoplasticity on Localization in Saturated Clays and Plastic Silts” is an informative and well-researched piece that provides valuable insights into the effects of viscoplasticity on localization processes in sensitive, saturated clays and plastic silts. The authors present a comprehensive numerical study that evaluates the effects of soil sensitivity, postpeak strain-softening rate, and strain rate dependency, as well as specimen size, mesh discretization, and loading rate on localization processes. The authors also provide a regression model that relates the global strain at the onset of localization to the soil’s strain rate dependency and postpeak strain-softening rate.

The article is generally reliable and trustworthy; however, there are some potential biases worth noting. For example, while the authors do discuss potential implications for practice based on their findings, they do not explore any counterarguments or alternative perspectives regarding their conclusions. Additionally, while they do note possible risks associated with their findings (e.g., landslides attributed to strength loss in sensitive clays), they do not provide any evidence or data to support these claims or explore them further. Furthermore, while they discuss various numerical methods for modeling localizations (e.g., second gradient technique), they do not provide any detailed analysis or comparison between these methods to determine which one is most effective for modeling localizations in sensitive soils.

In conclusion, this article is generally reliable and trustworthy; however, it could benefit from further exploration into counterarguments or alternative perspectives regarding its conclusions as well as more detailed analysis into various numerical methods for modeling localizations in order to provide a more comprehensive understanding of this topic.

# Topics for further research:

* Counterarguments to viscoplasticity localization
* Alternative perspectives on viscoplasticity localization
* Numerical methods for modeling localizations
* Comparison of numerical methods for localizations
* Strength loss in sensitive clays
* Landslides attributed to strength loss in clays

# Report location:

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