# Article information:

Mechanisms of clay smear formation in unconsolidated sediments - insights from 3-D observations of excavated normal faults - NASA/ADS  
<https://ui.adsabs.harvard.edu/abs/2016SolE....7..789K/abstract>

# Article summary:

1. The 3-D structure of clay smears in normal faults is not well understood, and outcrop studies to date are mainly 2-D.

2. This study presents a 3-D observation of an excavated normal fault with clay smear, together with both source layers, in unlithified sand and clay.

3. Clay smears are strongly affected by R and R' shears, mostly at the footwall side, and grain-scale mixing can lead to thickening of the low permeability smears.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article provides a detailed description of the 3-D structure of clay smears in normal faults, which is an important problem in applied and basic geoscience. The authors present a 3-D study of an excavated normal fault with clay smear, together with both source layers, in unlithified sand and clay from the Hambach open-cast lignite mine in Germany. The article is well written and provides clear evidence for its claims. However, it does not explore any counterarguments or potential risks associated with this type of research. Additionally, it does not provide any information on how this research could be used to improve current practices or technologies related to hydrocarbon exploration or groundwater management. Furthermore, there is no discussion on how this research could be used to inform policy decisions related to these topics. In conclusion, while the article provides a detailed description of the 3-D structure of clay smears in normal faults, it does not provide any insights into potential applications or implications for current practices or policies related to hydrocarbon exploration or groundwater management.

# Topics for further research:

* Hydrocarbon exploration risks
* Groundwater management implications
* Policy decisions related to hydrocarbon exploration
* Policy decisions related to groundwater management
* Potential applications of clay smear research
* Improving current practices related to hydrocarbon exploration and groundwater management

# Report location:

<https://www.fullpicture.app/item/65c0be824f6a3a9c4351c4265edde8a7>