Revisiting Probability of Failure vs. Factor of Safety: A Screening Tool with Limitations

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# ABSTRACT

Simplified methods to establish a relationship between factors of safety and probability of failure (Silva et al., 2008) have gained popularity in tailings dam risk assessments, offering a probabilistic perspective on stability with relative ease. While valuable as a screening tool, its limitations warrant caution, especially when used to assess a TSFs ALARP position. This paper applies a probabilistic analysis to a hypothetical case aiming to identify if simplified methods could potentially lead to misleading risk interpretations. A discussion on the limitations of (Silva, 2008) is presented, and alternative pathways are explored.