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Preliminary analysis of the use of SIAQUA-IPH model to river longitudinal dispersion of sediments resulted from dam-break of tailing dams

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Since it has a territory of continental proportions and notable geological diversity, Brazil has always had mining activities as one of the pillars of its economy. On a daily basis, great amounts of byproducts are produced, being necessary to build adequate storage locations, such as tailings dams. After the breakage of the tailing dam of Fundão in the city of Mariana/MG, an adequate allocation of byproducts became a big concern, being its main goal the protection of the environment. This paper sought to validate the utilization of SIAQUA-IPH, a quality water model for analyzing the dispersion of sediments resulted from the breakage of tailing dams. The case studied concerns the breakage of the tailing dam of Fundão (MG) itself, and the results obtained were compared to the data published by the Brazilian Company of Research and Mineral Resources ("CPRM").The results presented satisfactory values to the relation between the period of passing of the flood waves calculated and observed. However, the calculated values for the concentration were higher than those provided by CPRM, being necessary the realization of more studies to understand this issue.