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# PIV-PTV measurements of a tailings dam-break flow

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## ABSTRACT

To experimentally study transient flows such as dam-break flows imaging techniques are often used due to the constraints imposed by the highly transient nature of such phenomena. In this paper an experimental laboratory study of tailings dams made with a combined PIV+PTV algorithm is presented. In this algorithm the PIV technique is first applied to determine an estimator for the sediment layer velocity field. The obtained estimator is then used to compute a displacement estimator for the PTV approach. In this method the first step (PIV) provides a global estimation of the sediments velocity field and in the second step (PTV) a particle-by-particle analysis is obtained leading to an increased spatial resolution of the measurements. The obtained algorithm is applied to a laboratory tailings dam-break flow to obtain relevant information about the behavior of the tailings. This paper is a summary of the research presented in other papers by the authors.