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The influence of grain size ratio upon the relative mobility in bimodal sediment mixtures

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The behaviour of grain mixtures varies from that of uniform grain, which has implications for bedload sediment transport in gravel-bed rivers. In particular, sediment mixtures act to modify the level of mobility within the bed, leading to aggradation or degradation, which has significant implications for river stability. Previous work has reported upon this change in mobility within bimodal mixtures; however we do not know how far grain size ratio influences these results. We hypothesise that there is a link between the change in levels of mobility and the grain size ratio due to varying amounts of infiltration, which controls the hiding/exposure function. This poster will present experimental results from an investigation designed to isolate the influence of grain size ratio upon the change in levels of mobility in bimodal sediment mixtures. This experimental investigation was undertaken using various sizes of spherical particles in a relatively narrow flume. Using this arrangement, we are able to observe effects at the particle scale in order to understand the individual and bulk grain behaviour.