



## Using "Smart Sphere" for Studying Incipient Motion

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### ABSTRACT

Sediment transport in rivers and estuaries environments represents one of the major challenges to engineers and researchers in the field of earth surface dynamics. Specifically, of interest for this study is to identify the location upstream a particle at bed surface where the number and magnitude of energetic events correlate better to the instances of entrainment of this particle. The goal of this work is to use the "smart pebble" developed by Valyrakis et al [1] to assess the impulse and energy criteria for determining the critical or threshold conditions for incipient motion [2-4]. Additionally, an attempt is made to relate the above information to flow structures via linking particle and flow dynamics.

Keywords: incipient motion, smart pebble, quadrant analysis.

### Reference List

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