Underwater Orbital Sand Ripples in the Laboratory

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The talk will be a review of my old PhD thesis work on underwater orbital sand ripples (1-2-3-4-5-6). A presentation of the oscillating plates/cylinders method dating back to Casimir de Candolle in 1882 will be done in order to reproduce in the laboratory the phenomenology of ripples patterns and dynamics with a scale of the experimental setup of the order of the meter which allows not to use long open channels or closed piston-driven oscillating flows in canals. Movies of the simultaneous particle motions in the fluid and in the bulk of the sand bed will be shown. We will insist on the internal grain motions.

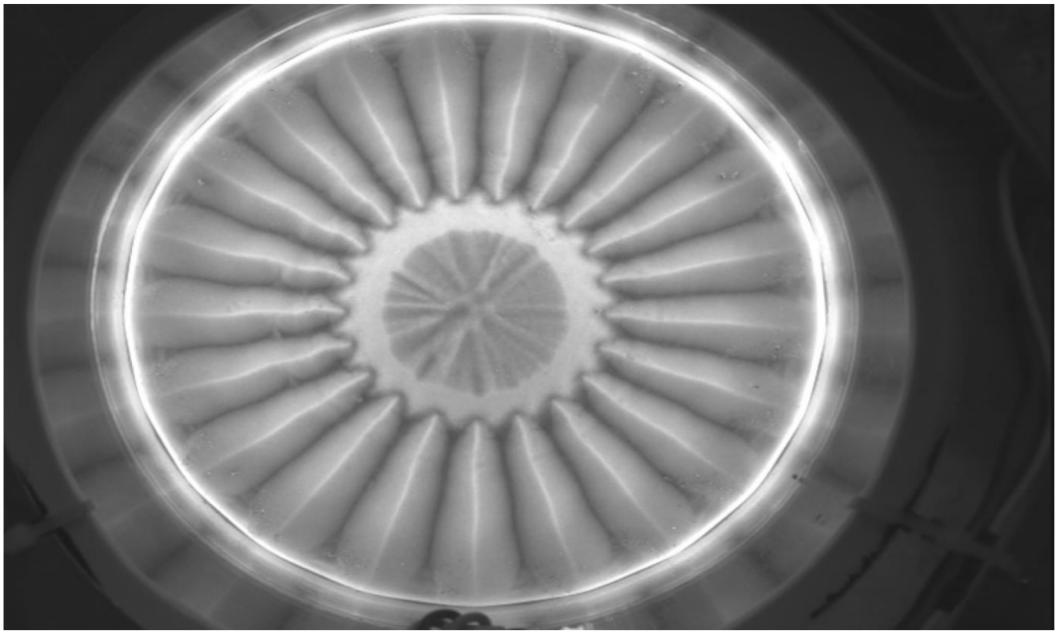

Figure 1: Vortex ripples in a cylindrical oscillating water tank à la de Candolle (5).

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