

Abstract Submitted  
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**The interaction of two bodies falling in tandem** NICOLAS BROSSE, PATRICIA ERN, Institut de Mecanique des Fluides de Toulouse, France — We have investigated experimentally the interaction of two identical bodies falling in a fluid at rest at intermediate Reynolds numbers ( $100 < Re < 300$ ). The bodies are disks of various diameter-to-thickness ratios ( $2 < d/t < 10$ ) and of density close to the fluid one. They are released either consecutively or simultaneously at two different locations. The path of the bodies when they fall separately is either rectilinear or a periodic zigzag depending on the corresponding values of  $d/t$  and  $Re$ . We will focus here on the case of two bodies released consecutively and exhibiting a rectilinear path when they fall separately. The motion of the bodies was recorded by two travelling cameras. While the forebody (the first body released) follows a rectilinear path, the aftbody (the second body released) accelerates thanks to the forebody's wake and oscillates when  $Re$  is close to the critical value of appearance of the zigzag motion. Though the forebody also accelerates, the aftbody eventually catches up the forebody. Afterwards, thick bodies ( $d/t = 3$ ) separate, whereas thinner bodies ( $d/t > 5$ ) continue their fall together. We will describe quantitatively the characteristics of the motion of the two bodies before and after grouping.

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