Abstract Submitted
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The branch-aided chaotic dispersal of Zelkova abelicea[1] DANIELE CERTINI, Uni Edinburgh, LAURENCE FAZAN, Uni Fribourg, NAOMI NAKAYAMA, Imperial College, GREGOR KOZLOWSKI, Uni Fribourg, IGNAZIO MARIA VIOLA, Uni Edinburgh — *Zelkova abelicea* and other members of the relict tree genus *Zelkova* (*Ulmaceae*) show a unique dispersal mechanism. Majority of mature fruits fall together with a part of the branch, containing a twig and dry leaves. These leaves act like a drag-enhancing appendage, carrying the fruits away from the parent tree in a chaotic path. Drop tests allowed to measure: terminal velocity, different flight modes steady for individual fruits, chaotic for the dispersal units and the horizontal distance of the dispersal. *Z. abelicea* presents two dispersal modes: slowly falling dispersal units with chaotic motion and fast falling individual fruits in a straight path. The terminal velocity of *Z. abelicea* dispersal units is 1.53 m s^{-1}, quite similar to that of the East-Asiatic *Z. serrata* (1.51 m s^{-1}). The falling velocity of individual fruits is instead 2.74 m s^{-1} in *Z. abelicea*, almost half of 5.36 m s^{-1} in (*Z. serrata*). Members of the genus *Zelkova* are found in Eurasia, yet their dispersal units have remarkably similar terminal velocity and flight behaviour. The dispersal of *Zelkova* is less efficient than that of other wind dispersed trees. It may have evolved for short-distance ecological spread.

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