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Fragmentation of an elastica NICOLAS VANDENBERGHE, EMMANUEL VILLERMAUX, IRPHE, CNRS - Aix Marseille Universite — When a thin rod is submitted to an axial force greater than its critical buckling load it takes the shape of an *elastica*. As the load further increases, a rod made of a brittle material breaks suddenly. More than two fragments may be formed during this fragmentation. In this work we discuss the sequence of events that lead to the final broken state with two or more fragments. We show that the criterion for breaking is not trivial. In particular, we investigate the effect of the duration of the loading and we show that at a given load the waiting time before breaking is broadly distributed. We discuss the consequences of the time delayed breaking on the distributions of fragment sizes and fragment numbers.

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