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On the compaction of fibers in a flow and the formation of sea balls PATRICE LE GAL, GAUTIER VERHILLE, IRPHE - CNRS - Aix Marseille University — Sea balls found on Mediterranean beaches are made of Posidonia fibers which aggregate due to the sea motions. To understand the mechanism of aggregation and compaction of these structures, we have studied the distribution of sizes and masses of these balls. We show that the pdfs are very close to log-normal distributions which suppress some formation mechanisms such as fibers aggregation one by one (that would give Poisson distributions) or random clustering or fragmentation (that would lead to Gamma distributions). Then, we present an experimental investigation on the dynamic of aggregation of fibers by waves generated in a tank. This experiment underlines the importance of the fiber rigidity.

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