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Sky dancer: the threshold of the buckling instability ANNE CROS, RODOLFO IBARRA NUÑO, Dpto de Fisica, Universidad de Guadalajara, Mexico, BASTIEN MICHON, IUT GTE, Universite Aix-Marseille III, France — The sky dancer is a fabric-made large vertical tube which may "dance" above an air blower. We reproduced in laboratory reduced models, with diameters between 2.2 and 3 cm, and lengths varying from 45 to 95 cm. We measured the air speed and the pressure at the tube basis for the lower threshold of the tube. This threshold separates two regimes: the first one which appears for the lower velocities, when the tube falls down because of its own weight, from the second one, which corresponds to the stable regime, for which the tube stands up. Our measurements show that the air pressure thresholds get values equal to the pressure performed by the tube weight. We discuss our results and compare them with previous studies which dealt with thicker-walled tubes.

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