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Supergravity effects on the geometry of a sessile drop MINERVA VARGAS, Instituto Tecnológico de Zacatepec, GUILLERMO HERNANDEZ-CRUZ, Centro de Investigación en Energía, Universidad Nacional Autónoma de México, RAYMUNDO NAJERA, Instituto Tecnológico de Zacatepec, EDUARDO RAMOS, Centro de Investigación en Energía, Universidad Nacional Autónoma de México — We have made experimental observations of the geometry of a drop of a Newtonian fluid sitting on a horizontal surface, subjected to constant vertical accelerations in the range from 1g to 13g. The shape of the drop was observed from plan and side views using a set-up composed by a cube beam splitter and a camera. Supergravity conditions were achieved using a centrifuge with 1.7 arm length and operated at a maximum angular speed of 86 rpm. We used water and ethanol as working fluids, and the Bond number range explored was from 1.3 to 16 for water and 3.7 to 49 for ethanol. Quantitative information on the shape of the surface of the drop was obtained by image processing. Preliminary observations with water indicate that $h \sim a^{-1/6}$ (h is the height of the drop and a is the vertical acceleration), in contrast to $h \sim a^{-1/2}$ predicted by a simplified theory. Possible sources for the discrepancy will be discussed.

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