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Role of contact line evaporation on the spreading of viscous droplet WASSIM BOU-ZEID, DAVID BRUTIN, Aix-Marseille University - IUSTI UMR 7343 — The effect of relative humidity and viscosity on the spreading dynamics of water-glycerol mixtures was analyzed for a range of relative humidities from 20% to 80%. Droplets of identical volume were deposited on ultra-clean microscope glass substrates. We demonstrated that, in addition to the competition between viscous forces, capillary forces and disjoining pressure, droplet spreading was also affected by the evaporation that occurred at the triple line. We provide an updated Tanner's law, which was modified to take into account the evaporative contribution. The same mechanism can be applied to adjust any fluid to Tanner's coefficient of 1/10.

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