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Rush hour for particles suspended in evaporating drops HANNEKE GELDERBLOM, ÁLVARO G. MÁRIN, JACCO H. SNOEIJER, DETLEF LOHSE, Physics of Fluids, University of Twente — In the late nineties Deegan et al. explained the formation contact-line deposits in a drying sessile droplet suspension of particles (Nature 389 (1997), Physical Review E 60, (2000)). It was found that if there is evaporation from the drop edge while the contact line is pinned, liquid and particles are dragged towards the contact line creating the well known *coffee-stain ring*. Here, we analyze this process in detail by measuring the velocity field inside an evaporating drop using μ -PIV. It was found that most of the particle transport occurs in the last moments of the droplet life-time. This rush explains the different characteristic packing of the particles in the layers of the ring, which is much more ordered in the thin outer part than in the thick inner one, since almost all particles arrive at the end. The rush-hour behavior of particles in evaporating drops can be attributed to the vanishing of the contact angle and follows from mass conservation.

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