**Caption list for movie files**

Movie S2

Surfactant-laden droplet spreading on Boger 2 (left) and Newtonian PEG (right) films seeded with 10 m diameter particles. Azimuthal variations of grey intensity indicating changes of film thickness are observed for the Boger film with the resulting patterns consistent with the rib-like structures seen in the Movie S1. No azimuthal variations of the grey intensity are observed for the Newtonian film, indicating marginal azimuthal thickness variations.

Movie S3

Surfactant-laden droplet seeded with 10 m particles spreading on an unseeded Boger film. An instability leading to formation of wide fingers occurs on the film-droplet-air contact line. The particles paths identify droplet penetration zones. The particle-free zones have the same structure as ribs in Fig. 3a and Movie S1 (left), suggesting increased film thickness in the ribs.

Movie S4

Velocity field in the Newtonian fluid film (PEG solution, liquid properties are given in Table 1) with initial film thickness during the spreading measured by the PTV. The largest velocity is observed in the Marangoni ridge. No significant azimuthal particle number variations are observed in the inner region after passage of the Marangoni ridge, indicating marginal, if any at all, azimuthal variations of film thickness.

Movie S5

Flow velocity field in the viscoelastic Boger 2 film (liquid properties are given in Table 1) with initial film thickness during the spreading captured by the PTV. Periodic azimuthal variations of the particle number in the inner region are clearly visible after passing of the Marangoni ridge, indicating periodic azimuthal variations of film thickness.