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Model description of the dynamic contact angle on an accelerating advancing contact line TAKAHIRO ITO, Nagoya University, YASUFUMI YAMAMOTO, Kansai University, KENJI KATOH, TATSURO WAKIMOTO, Osaka City University, RYOKO OTOMO, Kansai University, YOSHIYUKI TSUJI, Nagoya University — Dynamic contact angle, the angle observed for the moving contact line, has a primary contribution on the boundary condition for a liquid interface behavior enclosed by solid wall. The variation in the dynamic contact angle is, as presented by Cox(1986) or Voinov(1976), often modeled as a function of capillary number, *Ca*. However, most of these models assumes the steady state condition. We have experimentally found that the advancing contact angle on an accelerating circular rod just after the initiation of the motion takes smaller value than those observed for a steady state condition. Numerical simulation indicates that such deviation should be brought by the change in the microscopic contact angle and/or the 'slip length', the characteristic contact angle and length scale in the microscopic scale in the vicinity of the contact line, from the steady state ones. Then the deviation in the microscopic contact angle, also assumed to depend on *Ca* number, from the steady state was modeled as a function of the acceleration of the rod. The of the model applicability was confirmed for several kinds of liquids.

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