Models for Apparent Slip ERIC LAUGA, MICHAEL BRENNER, HOWARD STONE, Harvard University — A number of groups have reported microfluidic experiments consistent with liquid slip on solid surfaces. We present two physical models which do not require the breakdown of the no-slip boundary condition but lead to results consistent with slip. The first model considers the dynamic response of surface-attached bubbles in drainage experiments and the second considers electrical effects in pressure-driven flow experiments. In both cases, we evaluate the apparent slip length and compare them with the appropriate experiments.

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