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A Novel Method to Measure Contact Angle[1] YONGKANG CHEN, DANNY BOLLEDDULA, RYAN JENSON, MARK WEISLOGEL, Portland State University, JOERG KLATTE, University of Bremen, Germany — A liquid drop on a solid semi-infinite wall is bounded by the wall edge when the component of gravity tangential to the wall points towards the edge. Such drops are called wall-edge-bound-drops and have been studied recently and shown to exhibit a critical wetting behavior, where for a given orientation of the wall the liquid spreads along the edge of the wall forming a rivulet. Such rivulets are always stable when the contact angle of the liquid is below a certain critical value. Limiting cases of the wall-edge-bound-drop are the pendent drop and the sessile drop for which the critical contact angles are zero and 180 degrees respectively. The uniqueness of the critical contact angle corresponding to the orientation of the wall gives rise to a simple method to measure the contact angle of the fluid/solid system. Experiments demonstrating the approach are presented.

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Yongkang Chen
Portland State University

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