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**Experimental test of Schrodinger's first-passage-time theory using colloids in micro-channels** SUNGCHEOL KIM, XINSHENG LING, Brown University — We report an experimental study of the first-passage-time problem of driven diffusion in micro-channels. Fluorescent microspheres of 190nm diameter are confined in channels of 1.0 micron in width and 1.0 micron depth and driven by an applied longitudinal electric field. The images are acquired by a fluorescent microscope. The time dependence of the particle positions is tracked using particle tracking algorithms. The first passage times at different electric field values are extracted from the real-time data and compared with the exact solution given by Schrodinger for the 1D biased diffusion equation with one absorbing boundary condition.

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