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The role of extensional viscosity in frog tongue projection ALEXIS NOEL, Georgia Inst of Tech, CAROLINE WAGNER, GARETH MCKINLEY, Massachusetts Inst of Tech, JOE MENDELSON, DAVID HU, Georgia Inst of Tech — Frogs and other amphibians capture insects through high-speed tongue projection, some achieving tongue accelerations of over fifty times gravity. In this experimental study, we investigate how a frog's sticky saliva enables high-speed prey capture. At the Atlanta zoo, we used high-speed video to film the trajectory of frog tongues during prey capture. We have also designed and built a portable extensional rheometer; by following the capillary-driven thinning in the diameter of a thread of saliva we characterize the relaxation time and extensional viscosity and so infer the adhesive force between the frog tongue and prey.

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