

**Fluids at Brown, Division of Applied Mathematics
Fluids and Thermal Sciences, School of Engineering
Joint Seminar Series**

**TUESDAY – April 18, 2017
3:00 PM
Barus & Holley, Room 190**

Emmanuel Viot
Harvard University,
School of Engineering and Applied Science

Physics of Chewing

Over recent decades, many scientific efforts have been dedicated to finding a universal scaling law for the chewing frequency of animals as a function of their extremely diversified body masses. Unfortunately, variations in chewing frequency have been regarded as randomness. In this talk, I will show that the variations of chewing frequency instead reveals several physical constrains at stake during feeding. Muscle actuation sets the upper limit of the chewing frequency, while the mixing of food with saliva provides a minimal frequency for the efficient chewing of food.

Emmanuel Viot is a postdoc at Harvard University, School of Engineering and Applied Science, working now on the analogy between shell buckling instability and the transition towards turbulence. He got his phd from the Laboratory of Hydrodynamics of Ecole Polytechnique in Paris, France, where he was working on energy harvesting from flag flutter.

