

# Movie Captions

- Movie 1: Two 100cSt silicon oil drops of different sizes levitating & bouncing in a linearly stratified ethanol-water mixture. The sizes of the drops are  $R_1 = 54 \pm 2$  and  $R_2 = 155 \pm 2$ . The gradient of the ethanol weight fraction is  $dw_e/dy = 40m^{-1}$ .
- Movie 2: The flow field around a levitating drop shown by tracer particles. The gradient is  $dw_e/dy = 10m^{-1}$ . PSP (Polyamid seeding particles, Dantec Dynamics, Denmark) particles of diameter 20 are added in both ethanol and water at 0.4mg/mL before making the linearly stratified mixture.
- Movie 3 The flow field around a large bouncing drop shown by tracer particles. The gradient is  $dw_e/dy \approx 40m^{-1}$ . PSP particles of diameter 20 are added in both ethanol and water at 0.4mg/mL before making the linearly stratified mixture.