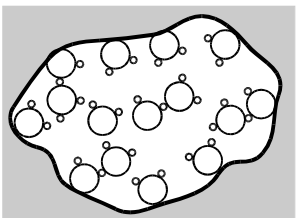
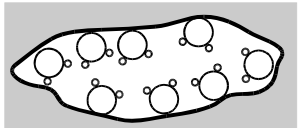


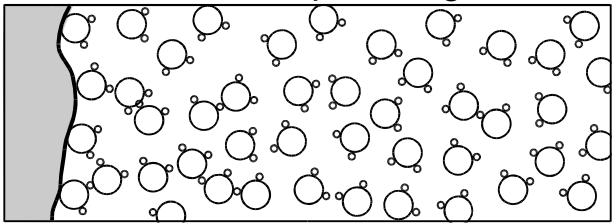
### NMR logs II: Distributions of relaxation time $T_2$

Shale – all pores very small, so all water is bound to surfaces



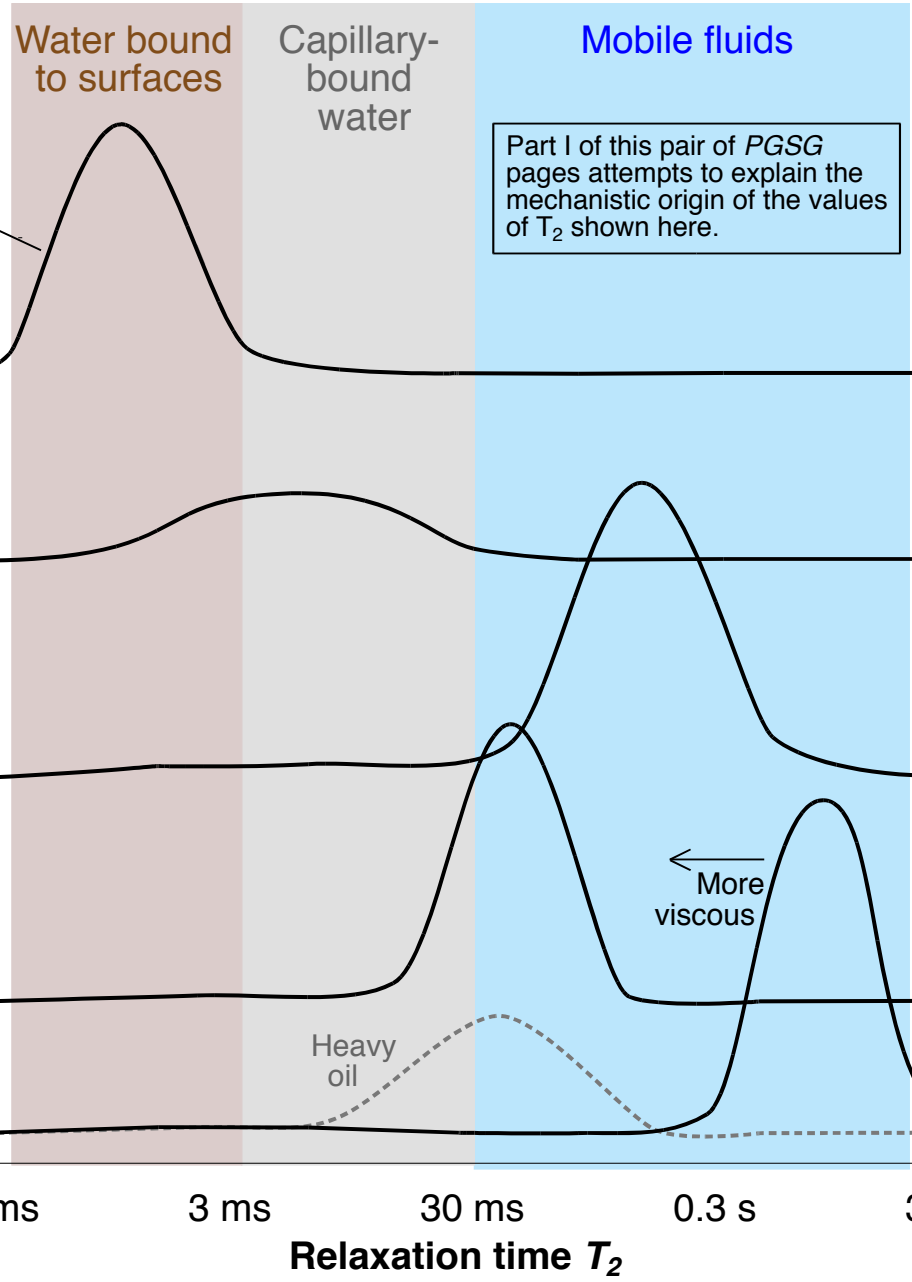
Water-bearing rock with small pores (e.g. siltstone to fine sandstone) – most water not mobile

Water-bearing porous rock – abundant mobile water dwarfs signature of bound water at pore edges



Gas-bearing porous rock – small freely-moving high-kinetic-energy molecules reorient quickly

Oil-bearing porous rock



Sources: Crane's Petrophysical Handbook; Baker-Hughes Atlas of Log Responses; Laboratory for Applications of NMR and Petrophysics (Federal Fluminense University, Brazil);