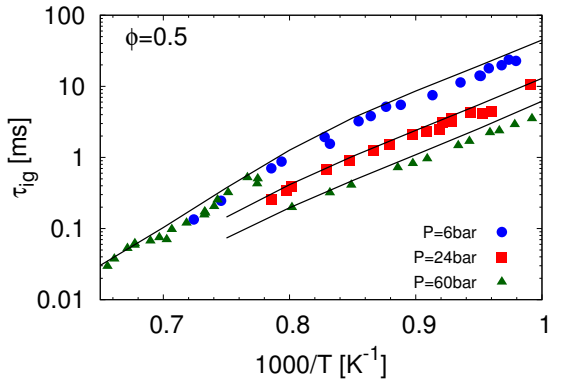
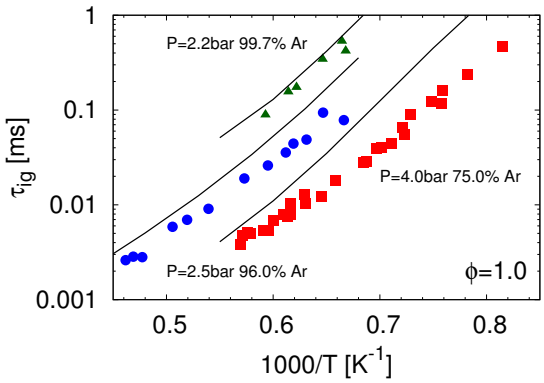
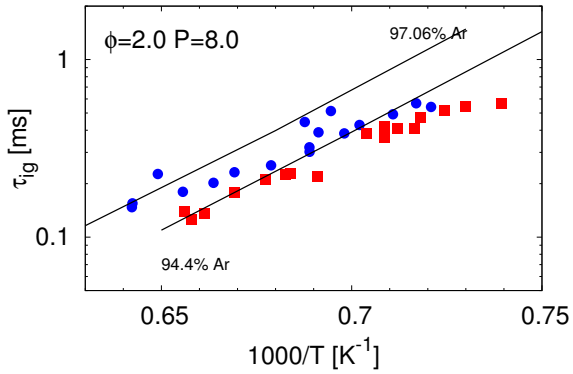
Ignition delay times







The recommended fits for the initial pressure as a function of initial temperature were used for the simulations at $\phi = 1$ ($P = 2.5bar$ and $P = 4.0bar$) (Brown & Thomas).

Experimental ignition delay times rescaled to indicated pressure using $\tau \sim P^{-0.89}$ as found in Lam & Hanson ($\phi = 0.5$).

References

[1] A. Burcat, A. Lifshitz, K. Scheller, G. B. Skinner, Shock-tube investigation of ignition in propane-oxygen-argon mixtures, Proc. Comb. Inst. 13 (1970) 745–755.

[2] C. J. Brown, G. O. Thomas, Experimental studies of shock-induced ignition and transition to detonation in ethylene and propane mixtures, Comb. Flame 117 (1999) 861–870.

[3] K.-Y. Lam, Z. Hong, D.F. Davidson, R.K. Hanson, Shock tube ignition delay time measurements in propane/O2/argon mixtures at near-constant-volume conditions, Proc. Comb. Inst. 33 (2010).