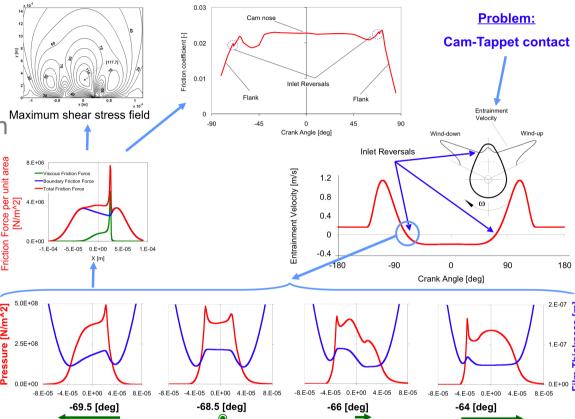
Transient Elastohydrynamic Tribology:

Valve Train Friction Losses

Motivation:

1. Up to 10% of total engine friction

- 2. Cam –Tappet contact:
 - the most loaded contact in the IC engine
 - the most likely place for oil film failure -> increased wear
- 3. Requires expensive additives



Approach:

- 1. Mathematical models to simulate
 - a. dynamic behavior of individual components.
 - b. surface interactions
 - c. friction forces between different components
- 2. Experimental techniques for validation

"Multi-physics analysis of valve train systems: from system level to microscale interactions", Proceedings of the Institution of Mechanical Engineers (IMechE), Journal of Multi-Body Dynamics – Part K, Vol. 221 (3), pp. 349-361 (2007)

Entrainment Velocity