

Transient Elastohydrodynamic Tribology:

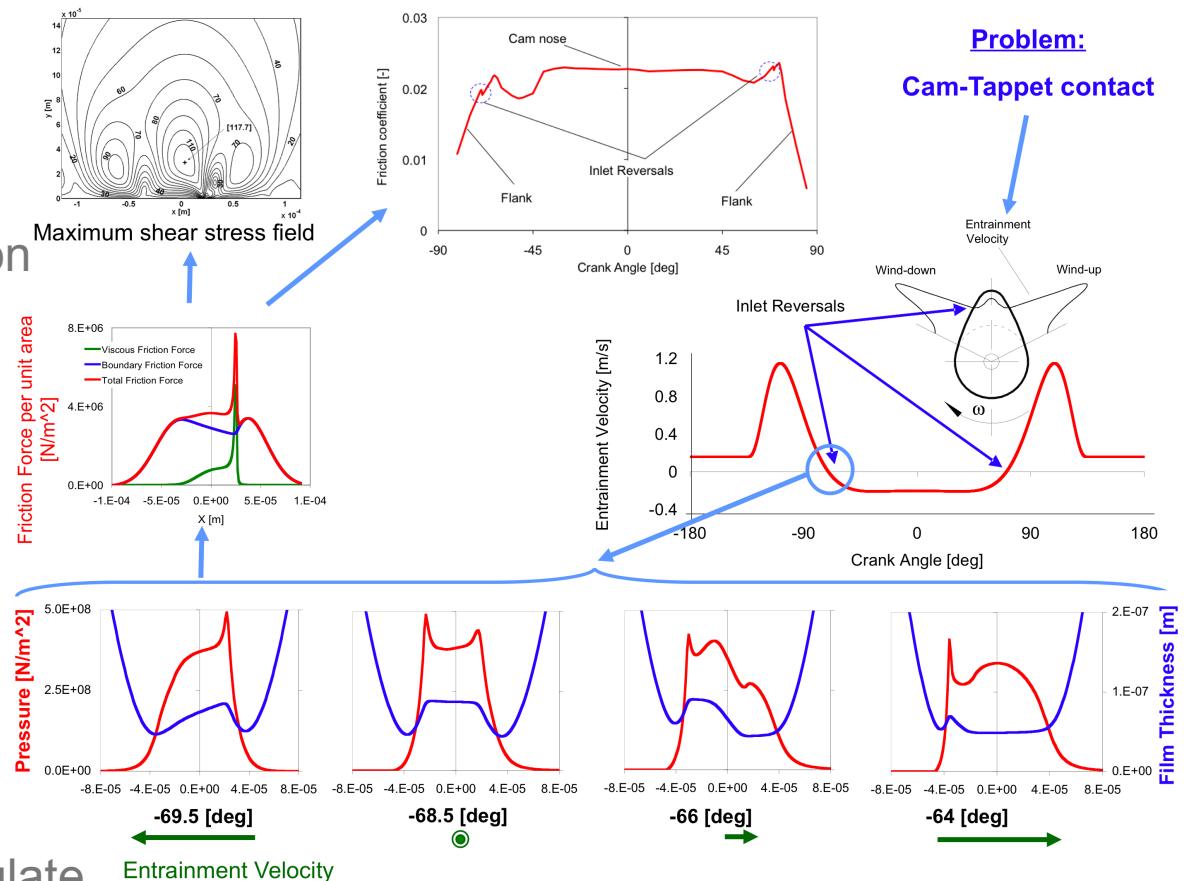
Valve Train Friction Losses

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 component
2. Experimental techniques for validation



Problem:
Cam-Tappet contact