By convention chemical engineering requires us to develop a set of empirical equations that predict the transformation of one state into another. Process Safety generally lacks that discipline and as a consequence is sometimes suggested as having a lack of academic rigour. (Apologies here to the hard working risk, fires & explosions modellers)

In the tradition of empirical chemical engineering, this paper takes a philosophical approach to “equations of state” as a way of demonstrating the transitions that have taken place in the approaches to Process Safety, consider the rise and fall of the importance of key components and present a “hypothesis” for discussion.

Use will be made of appropriate well known case studies and previous conference papers as exemplars to support this hypothesis.