SUMMARY OF 8 OF SPE´s COMPARATIVE STUDIES CASES

First Study: (SPE 9723 – 1980)

   The first study is a ”Comparison of Solutions to a Three-Dimensional Black-Oil
   Reservoir Simulation Problem”.
   The solution of the problems are related to SWELLING of OIP and the SWEEP
   of the gas during gas injection. The swelling is based on PVT data and the Sweep
   Effiency is based on the petrophysical data.
   The problem is also connected to the choise of the selected solution solution
   Method; IMPES or FULLY IMPLICIT solution. All problems are to be simulated
   to both solution methods.

Second Study: (SPE 10489 – 1982)

   The second study is a **CONING** study. The problem is simulated using a radial
   black-oil simulator.
   It is a single-well radial cross-section that involves water and gas coning as well
   as gas repressuring. It is a difficult problem that provides a good test of the
   stability and convergence behaviour of any simulator.

Third study: (SPE 12278 – 1987)

   The third study is a study of **Gas Cycling of Retrograde Condensate Reservoir**
   using a COMPOSITIONAL simulater (E300). The two major parts to a comp.
   model study are the PVT and the GRID. The PVT data is based on a fluid analysis
   report. A Black-oil simulator can be used, generating the PVT data from a EOS
   simulator.

Fifth study: (SPE 16000 – 1987)

   The fifth study is an **Evaluation of Miscible Simulators** using a
   Fourth-component miscible flood simulator and a fully compositional simulator.
   (Todd-Longstaff is an another possibility) The main different s between the
   simulators are the ”mixing rules and the relative permeabilities”. Field
   production and Simulator efficiencioes should be examine. WAG process.

Sixth study: (SPE 18741 – 1989)

   The sixth study is a **Comparison of Dual-Porosity Simulators**. There are two
   selected problems for the comparison. A single block example and a more
   complicated cross-sectionalexample simulating ; Depletion, gas and water
   injection cases.

Seventh study: (SPE 21221 – 1991)

   The seventh study is ”**Modelling of Horizontal Wells in Reservoir simulation**”
   The problem is to reduce the coning behavior using differents approaches for
   Calulating pressure drops in the wellbore. (E100)

Ninth study: (SPE 29110 -1995)

This study is an **Reexamination of Black-oil Simulation .**
Examination of complex hetrogenities simulation. Ref. to the first and second study.

Tenth study: (SPE 66599 – 2001)

This study is **A Comparison of Upscaling Techniques.**
Based on a geological model of (60x220x85) 1122000 blocks, the number of blocks should be reduced to optimize the simulations. Both petropysical data and relperm. Have to be upscaled. This is a difficult process. The fasit is the results from the simulation of the fine gridded geological model.